U.S. Department of the Interior
Bureau of Land Management

County of Riverside
Planning Department

Desert Quartzite Solar Project

Record of Decision

Decision to Amend California Desert Conservation Area Plan and Authorize Right-of-Way

BLM Case File No. CACA-49397
DOI-BLM-CA-D060-2017-0002-EIS

January 2020

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECORD OF DECISION
Desert Quartzite Solar Project
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DOI-BLM-CA-D060-2017-0002-EIS
Palm Springs-South Coast Field Office
Palm Springs, California

Decision to Amend California Desert Conservation Area Plan and Authorize Right-of-Way

Lead Agency:

Department of the Interior Bureau of Land Management
Palm Springs-South Coast Field Office
1201 Bird Center Drive, Palm Springs, CA 92262

Cooperating Agencies:

United States Environmental Protection Agency
United States Fish and Wildlife Service

January 2020

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INTRODUCTION

It is the decision of the United States Department of the Interior (DOI) to amend the California Desert Conservation Area Plan (CDCA Plan) and authorize the Desert Quartzite Solar Project (Project). This Record of Decision (ROD) documents the selection of the Resource Avoidance Alternative (Selected Alternative) from the Project's Final Plan Amendment/Environmental Impact Statement/Environmental Impact Report (PA/EIS/EIR). It authorizes issuance of a Federal Land Policy and Management Act (FLPMA) right-of-way (ROW) for construction, operation, maintenance, and decommissioning of a 450-megawatt (MW) solar photovoltaic (PV) project and transmission line on about 2,673 acres of BLM-administered public land. The Project will cost about $1 billion to build, generate about $72.5 million in annual economic activity during construction, power about 117,000 homes, and provide about $2.7 million in annual rent and fees to the U.S. Treasury, and is designed to avoid sensitive natural and cultural resources.

The CDCA Plan requires newly-proposed utility sites not previously identified in the Plan and proposed transmission lines outside designated utility corridors to be considered through a Plan Amendment. This decision therefore amends the CDCA Plan to identify the Desert Quartzite Solar Project site as suitable for solar energy generation, to close open routes, and to recognize the development of a high-voltage transmission line outside a designated corridor. The Final PA/EIS/EIR analyzed the proposed Project with comprehensive public and Native American Tribal involvement, and the BLM's process and decision are consistent with applicable law and policy.

This ROD contains the BLM's decision and rationale, and a summary of alternatives considered, public involvement, required findings, and other information. This ROD includes the following appendices: U.S. Fish & Wildlife Service Biological Opinion (Appendix A), Mitigation Measures (Appendix B), Protest Resolution (Appendix C), Response to Citizens for Responsible Solar (Appendix D), and Errata (Appendix E).

Desert Quartzite, LLC, a wholly owned subsidiary of First Solar Inc., applied for a ROW from the BLM to construct, operate, maintain, and decommission up to a 450 MW solar photovoltaic facility near the City of Blythe, Riverside County, California. The ROW application area comprised about 5,100 acres, with a proposed Project footprint of about 3,800 acres. The proposed Project also included construction of a 2.8-mile 230 kilovolt generation interconnection (gen-tie) transmission line connecting the Project to the Southern California Edison (SCE) Colorado River Substation. As part of its review of the application, the BLM considered an amendment to the CDCA Plan that would be necessary to authorize the Project. A joint PA/EIS/EIR was prepared in compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Riverside County is the lead agency under CEQA.

The Draft PA/EIS/EIR was published on August 10, 2018, which initiated a 90-day comment period. The Final PA/EIS/EIR was published on September 27, 2019, which initiated a 30-day protest period and a 60-day Governor's consistency review period.

DECISION

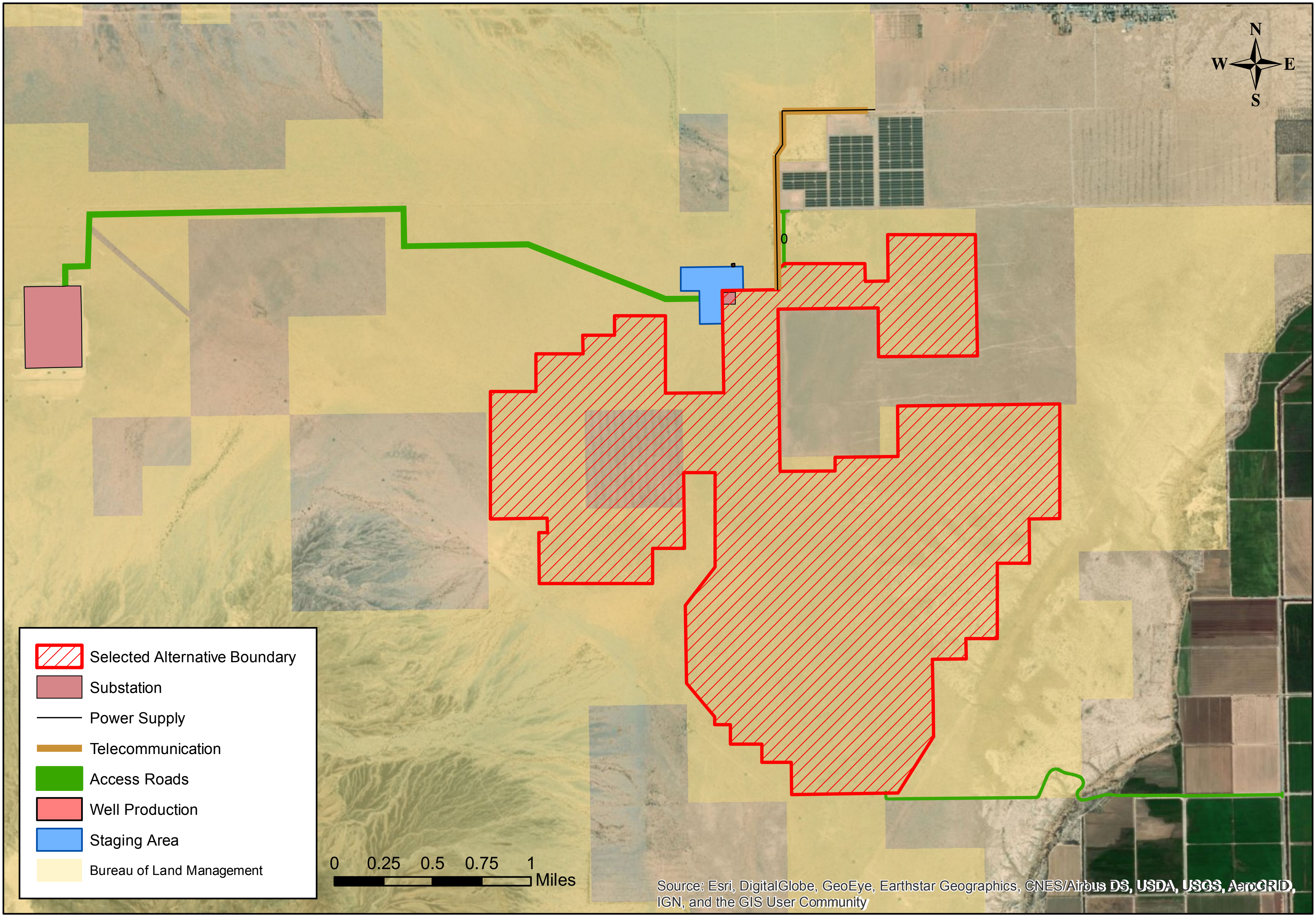
The BLM chooses Alternative 2: Resource Avoidance Alternative as its Selected Alternative. See figure 1. The Selected Alternative was also the BLM's Preferred Alternative in the Project's Final PA/EIS/EIR. The BLM's decision amends the CDCA Plan to identify the Project site for solar energy development and transmission and authorizes issuance of a 30-year ROW to Desert Quartzite, LLC for construction, operation, maintenance, and decommissioning of up to a 450 MW solar PV project, gen-tie line, and ancillary facilities on about 2,673 acres of BLM-administered public land in Riverside County, California, managed by the Palm Springs-South Coast Field Office. The BLM bases its decision on comprehensive analysis, review of alternatives, and relevant management considerations. The BLM fully analyzed the Selected Alternative in the Project's Final PA/EIS/EIR. The Final PA/EIS/EIR, published in the *Federal Register* on August 9, 2019, can be found on the BLM's ePlanning website: https://tinyurl.com/yy8o33ld. This ROD identifies other elements analyzed but not approved for the Project, and mitigation measures.

Land Use Plan Amendment

The CDCA Plan classifies the Project area as Multiple-Use Class-M, or "Moderate Use" (MUC-M). The CDCA Plan provides guidance regarding the management and use of BLM lands in the California Desert while balancing other public needs and protecting resources, including guidelines for solar development in MUC-M areas (see CDCA Plan at p. 15). Although energy and utility development are allowed in this area, and since Desert Quartzite was a "pending" project when the Desert Renewable Energy Conservation Plan (DRECP) was adopted, the BLM must amend the CDCA Plan to identify the site of the Desert Quartzite solar power generating facility within the CDCA on MUC-M lands. This ROD amends the CDCA Plan to identify the Desert Quartzite Solar Project site as suitable for solar energy generation, to close existing routes, and to allow construction of a high-voltage transmission line outside of a designated utility corridor. While the Project is located entirely on public lands and within a DRECP-designated Development Focus Area for energy and transmission, the DRECP's land use decisions do not apply to the Project. Therefore, the preceding amendment process steps applicable to the CDCA Plan Multiple-Use classes remain applicable.

Right-Of-Way Grant

The ROW grant offer will be within the boundaries of the originally Proposed Action. The Selected Alternative will produce up to 450 MW encompassing about 2,673 acres of BLM-administered public lands. The ROW will terminate in 30 years unless it is relinquished, abandoned, or terminated beforehand. Desert Quartzite, LLC may assign the ROW grant to another party pursuant to 43 Code of Federal Regulations § 2807.21. The grant has a right of renewal as long as the public lands are used for the purposes specified in the grant and Desert Quartzite, LLC, or its successors in interest, adhere to the terms and conditions of the grant.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Desert Quartzite Solar Project: Selected Alternative

Fig. 1

Palm Springs, California
(760) 833-7100
www.blm.gov/california
Date Prepared: 10/22/2019
Project: Desert_Quartzite_Solar_Facilities.mxd

The Final PA/EIS/EIR describes the Selected Alternative, gen-tie line, and ancillary facilities in detail in section 2.5. The BLM authorizes construction over a 30-month period and requires initiation of construction within 18 months of the issuance of the ROW, conditioned upon the BLM's final approval of construction plans. Permanent disturbance includes construction of permanent access roads, the solar energy generation facility itself, and the gen-tie line.

This ROD and the ROW grant incorporate by reference stipulations, such as mitigation measures and monitoring programs contained in Appendix B to this ROD; the requirement to secure all other necessary local, state, and Federal approvals, authorizations, permits; and Desert Quartzite, LLC compliance with other applicable Federal rules and regulations. Stipulations are designed to protect public health and safety and prevent unnecessary or undue degradation of the public lands.

Appendix B contains mitigation measures required by applicable law, land use plans, or are Applicant Proposed Measures (APM). Desert Quartzite, LLC volunteered several APMs to mitigate environmental impacts that BLM adopts with this ROD. The BLM has determined that mitigation measures and the monitoring report program summarized in Appendix A of the ROD represent all practical means to avoid or minimize environmental harm from the Selected Alternative.

There are seven compensatory mitigation measures that were analyzed as part of the Desert Quartzite Solar Plan Amendment/Environmental Impact Statement/Environmental Impact Report (PA/EIS/EIR). All of the measures are required under the California Environmental Quality Act (CEQA) as part of the California's significance determinations. In addition, WIL-4 and WIL-5 are required under the California Endangered Species Act and through the United States Endangered Species Act consulation process. The California Department of Fish and Wildlife has a requirement to mitigate impacts to Riparian Habitat and State Waters.

The California Desert Conservation Area plan has a requirement to mitigate impacts to the Mojave Fringe toed Lizard (BLM Sensitive Species; WIL-10) and the Mojave desert tortoise (listed under the Endangered Species Act;WiL-4&5). All of the measure(s) comply with WOIM 2019-018 and none requires the transfer of funds to the Bureau of Land Management.

Route Designations

In 2002, the BLM designated travel and transportation routes in the area through the Northeastern Colorado Plan Amendment (NECO) to the CDCA Plan. This ROD changes some route designations (see Final PA/EIS/EIR at section 4.14.3.2). The Project site includes portions of previously open routes that will now be closed during construction and operation of the Project. Public recreation in the area is assured by remaining existing routes, and no public land destinations will be off-limits, other than those within the boundaries of the ROW. Closed routes will be available for use when the Project is decommissioned.

What is Not Being Approved

The BLM is not approving construction within the entire Proposed Action area, only the area approved under the Selected Alternative. The BLM is not approving any activities outside the scope of the Final PA/EIS/EIR or that which is inconsistent with BLM land use plans or applicable law. During earlier iterations of the Project, studies identified possible sites where development may have been feasible. Other sites, technologies, and methods were considered but eliminated from detailed analysis during previous project analyses. None of these alternatives or sites were chosen as the Selected Alternative, and none are approved.

Alternatives

The BLM considered several alternatives as described in Final PA/SEIS/EIR Chapter 2.

Proposed Action

The Proposed Action is construction and operation of up to a 450 MW nominal capacity, alternating current solar PV energy-generating facility. Solar PV technology involves the direct conversion of photons from sunlight into electricity. Once completed, the facility would deliver power to the SCE Colorado River Substation located about four miles from the Project. The Proposed Action would permanently disturb about 3,800 acres of public lands. The proposed Action is described in detail in sections 2.3 and 2.4 of the Final PA/EIS/EIR.

Alternative 2: Resource Avoidance Alternative (Selected)

Alternative 2 is BLM's Selected Alternative and is described in Final PA/EIS/EIR section 2.5. Desert Quartzite, LLC designed this alternative to avoid impacts on cultural resources, stabilized sand dunes, and habitat for BLM sensitive species. This alternative will be within the same Project boundaries as the Proposed Action but the solar PV field will be more compressed, avoiding most of the primary desert wash. This alternative will still be capable of producing 450 MW, but its permanent disturbance area will be about 2,768 acres.

Alternative 3: Reduce Project Alternative

Alternative 3 further reduces the Project footprint to reduce impacts to habitat for the Mojave fringe-toed lizard and Harwood's eriastrum, a BLM Sensitive Species plant. This alternative would be constructed within the same boundary as the Proposed Action, but development would be limited to a much smaller area, based on the resource avoidance requirements defined in the DRECP Conservation Management Actions (CMAs). The resulting developable area within the ROW boundary would be about 2,033 acres. The generating capacity would be about 285 MW.

No Action Alternative

The BLM No Action Alternative would result in the Proposed CDCA Plan amendment and ROW application CACA-49397 being denied. The area would then fall under the DRECP Plan Amendment. The Project would not be built, but the area would be available for future applications.

Rationale

The BLM's decision considers relevant factors and information and is based on sound environmental analysis and public involvement. Factors considered in this decision include the BLM's purpose and need, the highest and best use of public lands, public comments and stakeholder interests, economic and technical information, and applicable law and policy. The BLM found that both Alternative 2 and Alternative 3 have fewer effects on public lands compared to the Proposed Action. The BLM selected Alternative 2 because it developed a feasible project that would generate almost twice the amount of energy as Alternative 3. While Alternative 3 would reduce some of the effects of Alternative 2, it does not reduce the effects substantially, therefore, the BLM found Alternative 2 the best use of public lands.

The decision fulfills legal requirements for managing public lands, as described in the Required Findings section, below. The Project will contribute to the public interest by facilitating infrastructure investments that will create jobs and economic activity, increasing safe and environmentally sound production and transmission of renewable energy on public lands to meet Federal and state goals, and protecting sensitive natural, cultural, and recreational resources.

Final PA/EIS/EIR describes the BLM's purpose and need for the Proposed Action. The Final PA/EIS/EIR also describes Riverside County's and the Applicant's project objectives. By approving the Project, the BLM will implement the following management objectives, among others:

- Executive Order 13783, dated March 28, 2017, which promotes "clean and safe development of our Nation's vast energy resources, while at the same time avoiding regulatory burdens that unnecessarily encumber energy production, constrain economic growth, and prevent job creation."

- Executive Order 13807 (August 15, 2017) and Secretary's Order 3355 (August 31, 2017) established policy to prioritize infrastructure projects and streamline the environmental review process.

This decision achieves several Department of the Interior priorities, including: 1) sustainably develop our energy and natural resources by approving 450 MW of solar energy; 2) ensure Tribal sovereignty means something by ensuring Section 106 was completed appropriately; 3) increase revenues to support the Department and national interests because the project will provide about $2.7 million annually to the U.S. Treasury; 4) strike a regulatory balance by selecting a site that reduces the environmental effects and develops the most energy possible through efficient use of space; 5) modernize our infrastructure by allowing a development of new technology; and 6) achieve our goals and lead our team forward. This decision achieves the BLM leadership priorities of energy independence, shared conservation stewardship, job creation, and serving America. The Project will cost about $1 billion to build. The project will generate about $72.5 million in annual economic benefit and create about 890 jobs during construction. Capable of producing more than 2.25 billion kilowatt hours (kWh) of electrical energy per year, the Project could produce enough energy to power about 117,000 average California homes.

PUBLIC INVOLVEMENT

Public involvement was a crucial component in this planning effort. The BLM thanks all those who took the time and effort to participate in or provide comments on the Project. The Final PA/EIS/EIR describes public comment and participation processes and actions.

Scoping

Public scoping identified the following issues:

- BLM procedures
- Statement of Purpose and Need

- Human environment issues
- Natural environment issues
- Indirect and cumulative impacts

Public Comments and Concerns

Appendix Z of the Final PA/EIS/EIR shows comments received on the Draft PA/EIS/EIR and Appendix AA provides BLM's responses. The Final PA/EIS/EIR was edited to reflect comments. Stakeholder positions included:

- Public concerns about the need for the Project and energy alternatives; air quality impacts, dust, greenhouse gas emissions, and climate change; bird mortality and migratory bird protection and monitoring; cultural resource impacts; Desert Tortoise and Mojave Fringe Toed Lizard impacts and protection measures; plant species impacts, loss of habitat, and mitigation; the potential for fires and spreading Valley Fever; road access; visual impacts; water supply and impacts to groundwater; and the need for strong management and decommissioning plans.
- State and Local Agencies: concerns regarding air quality mitigation, hazardous waste site assessment, wildlife surveys and mitigation measures, and groundwater monitoring.
- Tribes: concerns that the Project would impact ancestral sites, biological resources, Blythe airport, cultural landscapes, groundwater, and migratory birds; and would require participation of Native Americans in monitoring during construction.
- Federal Agencies:
  - The U.S. Environmental Protection Agency expressed concerns about air quality, desert tortoise movement, energy storage systems, mitigation monitoring, tribal consultation, and stormwater, surface hydrology, and erosion.
  - The U.S. Fish and Wildlife Service expressed concerns about desert tortoise and migratory birds.

Information Received After the Close of Public Comment Period

Several months after the close of the public comment period on the Draft PA/EIS/EIR (November 8, 2018), two written comments were received from Adams, Broadwell, Joseph and Cardoza, a Professional Corporation on behalf of Citizen for Responsible Solar, one dated February 7, 2019 and one dated March 11, 2019. The first letter provided a variety of comments, including a request that a health risk assessment (HRA) be prepared for the Project. However, since the Mojave Desert Air Quality Management District, which oversees air emissions in the site vicinity, did not request and does not require an HRA for this project, BLM and Riverside County concluded that an HRA is not needed.

The second letter added comments related to biological resources, including a challenge to the finding in the Draft PA/EIS/EIR that jack rabbit density was low and therefore the potential for golden eagles to forage at the site was low. BLM reviewed the literature and found that the density at the site was accurately characterized as low compared to the density reported at other sites, and therefore no change to the finding that golden eagles were expected to only forage infrequently at the site was warranted.

Despite the lateness of these comments, Riverside County responded to each comment in detail and posted both the comments and their responses on its website along with the **Final PA/EIS/EIR**. See appendix D for a copy of the comments and responses. None of these comments required a substantial change in BLM's analysis of the Project or hadn't been addressed through responses to other commenters, so no recirculation of the Draft PA/EIS/EIR was needed. On October 11, 2019, the commenters subsequently informed BLM that they no further objections to the proposed project.

Native American Government-to-Government Consultation

As described in Final PA/EIS/EIR section 6.3.3, the BLM conducted (or offered to conduct) government-to-government consultation with Federally recognized Tribal governments in accordance with NEPA, National Historic Preservation Act (NHPA) Section 106, American Indian Religious Freedom Act (AIRFA), Executive Order 13175, and Executive Order 13007, among others. The BLM timely notified Tribes and requested government-to-government consultation throughout the NEPA and Section 106 review processes. Key junctures included an invitation to Tribes to consult regarding the Project by letter dated August 21, 2014; a field visit with the Colorado River Indian Tribes on June 10, 2015; an invitation to consult and notification of the availability of the Project's Class III Archaeological Survey Report in a letter dated April 20, 2016; an invitation to the Tribes to consult when the BLM made its determination of eligibility and findings of effect on June 22, 2018; an offer to consult and a notification to the 15 Tribes, including CRIT, about the release of the Draft PA/EIS/EIR in a letter dated August 9, 2018; notification to the Tribes of a public meeting on the Draft PA/EIS/EIR held by the BLM in Palm Desert and Blythe, CA on September 26 and 27, 2018 where a member of the CRIT tribe attended; and government-to-government consultation held with the Cahuilla Band of Indians and Twentynine Palms Band of Mission Indians in November, 2018.

The BLM considered Tribes' comments during the NEPA and the Section 106 review, as discussed in the BLM's consultation letters with the SHPO. Written comments on the Draft PA/EIS/EIR and BLM's responses are summarized in the Final PA/EIS/EIR's Response to Comments. The importance of the Mule Mountains and geoglyphs to the Tribes is recognized by BLM and was a factor in developing BLM's Selected Alternative, which avoids eligible sites in the southern region of the project area immediately adjacent to the Mule Mountains. The BLM also analyzed and found that the Project would not indirectly affect sensitive sites in the Mule Mountains. On September 24, 2019, the BLM received concurrence from the California State Historic Preservation Office on the determinations of National Register of Historic Places eligibility and finding of no adverse effect for the Selected Alternative.

Protest Resolution Summary

The publication of the Desert Quartzite Final PA/EIS/EIR initiated a 30-day protest period, which closed on October 28, 2019. The BLM received a protest letter from the Colorado River Indian Tribes and Basin and Range Watch. The BLM has considered and resolved all protests on the

Desert Quartzite Solar Project Final PA/EIS/EIR. A summary of the protest and BLM's resolution to those protests are in Appendix C of this decision.

OTHER REQUIREMENTS

After consideration of the discussions in Final PA/EIS/EIR Chapter 3, *Affected Environment,* and Chapter 4 *Environmental Consequences,* the BLM has determined the Selected Alternative is consistent with all other applicable laws and regulations that require specific actions be completed prior to issuance of a ROD and project approval.

Federal Land Policy and Management Act Plan Consistency

The Federal Land Policy and Management Act of 1976 (43 USC § 1701 et. seq.) requires BLM actions to be consistent with its land use plans, including the CDCA Plan, as amended. This proposed ROW and Plan Amendment for the Selected Alternative are for use of BLM-managed Public Land included in the CDCA Plan. As described below, the Applicant's proposed ROW is not consistent with the CDCA Plan designation at the time of application and is exempt from the DRECP. Thus, BLM must amend the CDCA Plan to allow the Applicant's applied-for use and does so with this ROD.

California Desert Conservation Area Plan 1980 as amended (CDCA Plan)

The BLM manages public lands in the CDCA, including the site of the Selected Alternative, consistent with the CDCA Plan and its amendments. The Selected Alternative's site includes about 2,700 acres of BLM-managed CDCA public land wholly within the CDCA. The CDCA Plan provides overall regional guidance for BLM-administered lands in the CDCA and establishes long-term goals for their protection and use. The CDCA Plan Record of Decision (ROD) (1980) contemplated wind, solar, geothermal, and power plants in the CDCA. A CDCA Plan goal is to "[i]dentify potential sites for geothermal development, wind energy parks, and power plants" (CDCA Plan p. 93, 1980). The CDCA Plan also provides for "[s]ites associated with power generation or transmission not identified in the Plan [to] be considered through Plan Amendment process" (CDCA Plan p. 95, 1980).

The Final PA/EIS/EIR discusses plan conformance at sections 1.5.1 (need for a Project-specific Plan Amendment), 1.6.4 (land use plan conformance and the Project's MUC-M classification under the CDCA Plan); 3.10.1 (land ownership/management and allowable uses), and 4.10.3.1 and Appendix F (compliance and consistency with the Project's MUC-M classification).

The CDCA plan classified the Selected Alternative's site as MUC-M. These lands are managed in a controlled balance between higher-intensity use and protection. A wide variety of uses such as mining, livestock grazing, recreation, energy, and utility development are allowed. Based on CDCA Plan Table 1, Multiple-Use Class Guidelines, and CDCA Plan Chapter 3, Energy Production and Utility Corridors Element, solar uses are conditionally allowed in the Multiple-Use Class M designation, contingent on the CDCA Plan amendment process and NEPA requirements being met for the proposed use. The BLM's decision to implement the Selected Alternative is consistent with the CDCA as amended, after approval of the Plan Amendment identified in this ROD. This ROD follows the Governor's consistency review requirements of 43 CFR 1610.3-2(e).

National Environmental Policy Act (NEPA)

The BLM finds the environmental analysis and public involvement process throughout the preparation of the Final PA/EIS/EIR complies with the requirements set forth by the Council for Environmental Quality for implementing NEPA (40 CFR 1500-1508). The BLM's decision is based on the best science and information available and is made with careful consideration of all other applicable laws, regulations and policy. The BLM is the lead agency under NEPA, and it took a "hard look" by analyzing the Project in full compliance with NEPA Section 102(c) (42 U.S.C. § 4321), and Council on Environmental Quality and DOI implementing regulations (40 C.F.R. Parts 1500–1508 and 43 C.F.R. Part 46).

Endangered Species Act (ESA)

Final PA/EIS/EIR sections 1.5.3, 1.10.1, 3.3.3, 3.4.1, and 6.3 discuss the Endangered Species Act (ESA) (16 USC § 1531 et seq.) and U.S. Fish and Wildlife Service coordination. Under Section 7 of the ESA, a Federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its critical habitat must consult with the FWS. The BLM prepared a Biological Assessment (BA) for the FWS in accordance with Section 7 of the ESA. After reviewing the BA, the FWS issued a Biological Opinion (BO) that concluded the Selected Alternative would not likely jeopardize the continued existence of the Mojave desert tortoise, a listed species, or result in the destruction or adverse modification of critical habitat. A copy of the BO is included in Appendix A of this ROD. Desert Quartzite, LLC will be required to comply with the BO as a condition of the ROW grant.

Executive Order 13186 – Migratory Bird Treaty Act (2001)

Final PA/EIS/EIR sections 3.4.1, 4.4.3.1 and 4.4.3.2, and 4.4.6 discuss MBTA project analysis. The Proposed Project and alternatives 2 and 3 complies with the MBTA. Section 4.4.6 concludes that the Project is likely to contribute to increase avian mortality through collision with PV panels, entanglement in netting, drowning, and an incremental loss of habitat, and that implementation of project-specific mitigation measures would avoid direct impacts to actively breeding birds and would provide consistency with the Migratory Bird Treaty Act.

National Historic Preservation Act (NHPA)

Pursuant to NHPA §106 (Section 106)(54 U.S.C. §306108) and its implementing regulations (36 C.F.R. § 800) the BLM consulted with the California State Historic Preservation Officer (SHPO) and consulting parties (Federally recognized Tribes) in considering the effects of the Project on those resources listed or eligible for the National Register of Historic Places. Final PA/EIS/EIR section 6.3.2 describes the Section 106 process and efforts to consult with the SHPO and Tribes. The BLM reached a finding that the Selected Alternative will have no adverse effect on historic properties. The SHPO concurs with the BLM's NRHP eligibility determinations and findings of effect. The BLM notified Native American Tribes about its determinations and findings.

The potential for discovery of unknown archaeological deposits exists during Project construction and decommissioning within the direct APE. The BLM will require archaeological monitoring, post-review discovery, and unanticipated effects plans as identified in the mitigation measures in

Appendix B of this decision.

Environmental Justice (Executive Order 12898)

Final PA/EIS/EIR sections 3.6 and 4.6 discuss environmental justice. Neither scoping nor analysis identified potentially adverse effects to minority or low-income populations. The BLM concludes that implementation of the Selected Alternative would not have a disproportionate effect on minority or low-income populations and does not pose any significant socio-economic risks that would disproportionately affect minority or low-income populations.

Clean Air Act

Final PA/EIS/EIR sections 3.2 and 4.2 discuss Clean Air Act analysis. The BLM finds the Selected Alternative fully complies with the Clean Air Act. Impacts associated with operation and maintenance of the Selected Alternative are expected to meet the requirements of the Clean Air Act (see Final PA/EIS/EIR section 4.2.3.2). The Project is located in the Mojave Desert Air Basin (MDAB). There are no Federal nonattainment or maintenance designations in the Project area. Therefore, Federal agency actions in the MDAB are not subject to Federal conformity review regulations, which presume conformity with state plans where Project emissions are below applicable thresholds (the "*de minimis* thresholds"), Title 40 CFR Part 93.153(b).

Clean Water Act

Final PA/EIS/EIR sections 1.5.4, 1.10.0, 3.3.4, 4.3.3, and 6.2.3 discuss Clean Water Act (CWA) analysis. On February 18, 2016, the U.S. Army Corps of Engineers determined that waters of the United States do not occur on the Project site.

Environmentally Preferable Alternative

Council on Environmental Quality regulations (40 CFR 1505.2(b)) require the ROD to specify "the alternative or alternatives which were considered to be environmentally preferable." The BLM determines that Alternative 2, BLM's Selected Alternative, is the environmentally preferable alternative. First, the Selected Alternative would protect, preserve, and enhance historic, cultural, and natural resources to a greater extent than the originally Proposed Action. Second, even though Alternative 3 would cause slightly less ground disturbance than Alternative 2, it would have the same impacts to vegetation, sensitive species habitat, cultural resources, and groundwater use, and would only produce 285 MW, which would reduce BLM's ability to meet its management and policy objectives to promote clean and safe development of the energy resources within the United States and to prioritize renewable energy development on public lands (Final PA/EIS/EIR section 1.3.1). Third, while the No Action Alternative would involve no ground disturbance, it would produce 0 MW, which would have no environmental benefits in terms of reducing greenhouse gas emissions or promoting renewable energy development. As a result, BLM has identified the Selected Alternative as the environmentally preferable alternative because it provides the best balance of meeting the BLM's purpose and need, allowing the development of renewable energy, and avoiding impacts to sensitive natural and cultural resources.

IMPLEMENTATION

As per the requirements of 40 CFR 1506.10, this decision has been signed 30 days after the Federal Register Notice of Availability for the Final PA/EIS/EIR, published August 9, 2019. Project implementation may begin immediately.

CONTACT

For additional information, contact Project Manager Brandon Anderson at 951-697-5200.

SECRETARIAL APPROVAL

I hereby approve these decisions. My approval of these decisions constitutes the final decision of the Department of the Interior and, in accordance with the regulations at 43 CFR 4.410(a)(3), is not subject to appeal under Departmental regulations at 43 CFR Part 4. Any challenge to these decisions, including the BLM Authorized Officer's issuance of the right-of-way as approved by this decision, must be brought in the federal district court.

1/9/20

Casey Hammond
Acting Assistant Secretary, Land and Minerals Management
Department of the Interior

Date

Appendix A: Biological Opinion

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

In Reply Refer To:
FWS-ERIV-12B0378-19F0134

April 12, 2019
Sent by Email

Memorandum

To: Field Manager, Palm Springs-South Coast Field Office,
Bureau of Land Management, Palm Springs, California

From: Acting Field Supervisor, Carlsbad Fish and Wildlife Office
Carlsbad, California

Subject: Section 7 Biological Opinion on the Desert Quartzite Solar Project, Riverside County, California

This memorandum transmits the U.S. Fish and Wildlife Service's (Service) biological opinion regarding the construction, operation, maintenance, and decommissioning of the proposed Desert Quartzite Solar Project (Project) in Riverside County, California, and its effects on the federally threatened Mojave population segment of desert tortoise (*Gopherus agassizii*) in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq*.). Designated critical habitat for desert tortoise does not occur in the action area. Your request for formal consultation dated October 25, 2018, was also received on October 25, 2018. First Solar is the non-Federal applicant for a Bureau of Land Management (BLM) right-of-way (ROW) authorization for the Project.

Your agency has determined the Project may affect, but is not likely to adversely affect Yuma Ridgway's rail (*Rallus obsoletus yumanensis* [formally known as Yuma clapper rail, *Rallus longirostris yumanensis]*), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*) and the western distinct population segment (DPS) of the yellow-billed cuckoo (*Coccyzus americanus*).

We do not anticipate adverse impacts to these species breeding activities with implementation of the Project since individuals will be migrating through the action area between their wintering and breeding areas. These species do not breed or winter within the Project area because suitable breeding habitat is not present. Therefore, adverse effects would result from collision with Project features such as solar panels, power lines, and fences. Based on the limited number of mortalities found at other utility-scale solar facilities in the Mojave Desert, collision effects at a single project would be unlikely to occur or would be considered a discountable effect. The information we have available to date indicates that individuals of listed birds have indeed died as a result of interactions with solar facilities. However, when we attempted to evaluate the risk of collision at specific renewable energy projects, we determined the risk to individual birds was unquantifiably low and therefore discountable when considered at a project level. However, the documented patterns of mortality to Yuma Ridgway's rail and willow flycatcher (subspecies undetermined) from energy infrastructure in the California desert (Service 2013-2015, unpubl. data), and the additive risk of multiple hazards posed by energy-related infrastructure development on a California Desert Conservation Area (CDCA) Plan level, are not discountable and should be addressed at a programmatic scale in a way that provides consistency across different projects. As a result, the Service and BLM committed to work together to develop options that provide better project-by-project consistency in monitoring bird mortalities, including incidental take of listed birds, and can be applied under the CDCA Plan and the Act (Service 2017b).

Until a programmatic approach is developed, we will continue to evaluate this risk on a case-by-case basis and to provide site-specific recommendations to avoid adverse effects to avian species. Based on the information that is available to us at this time, we concur with your determination that the Project is not likely to adversely affect Yuma Ridgway's rail, least Bell's vireo, southwestern willow flycatcher, or the yellow-billed cuckoo. Designated critical habitat for these species does not occur in the Project area; therefore, no effects to designated critical habitat are anticipated.

This biological opinion is based on information provided in the following documents and communications that follow: (1) the Bureau of Land Management (BLM) Draft Plan Amendment/Environmental Impact Statement/Environmental Impact Report for the Desert Quartzite Solar Project (BLM 2018, hereinafter draft EIS/EIR); (2) the Draft Biological Assessment for the Desert Quartzite Solar Project (West 2018, hereinafter BA); (3) the Biological Resources Technical Report, Desert Quartzite Solar Project (Ironwood 2014, hereinafter BRTR), (4) written, telephone, and electronic mail correspondence received during the consultation time period; and (5) pertinent literature contained in our files. The project file for this consultation is located at the Carlsbad Fish and Wildlife Office.

Consultation History

Between May 2012 and January 2019, staff from the Palm Springs Fish and Wildlife Office (PSFWO) worked with the BLM, First Solar, and staff from the California Department of Fish and Wildlife (CDFW) to clarify the Project Description, Project build-out scenarios, effects to desert tortoise, effects to listed birds, and avoidance and minimization measures. Efforts to clarify these issues included conducting site visits and meetings, assessing baseline conditions, and providing comments on the draft BA.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The information below provides a summary of the proposed action. Refer to the BA and draft EIS/EIR for a more detailed description of Project activities.

The proposed action is the BLM’s issuance of a ROW grant that will authorize First Solar (Applicant) to construct, operate, maintain, and decommission a 450 megawatt solar photovoltaic (PV) facility and construct 3.94 miles (mi) of a 230-kilovolt (kV) electrical transmission line (generation interconnection or gen-tie) that would occupy a land area of 2,831 acres (ac) (Table 1, Figure 1), including 2,671 ac on BLM land and 160 ac on private land. This action is referred to as the Resource Avoidance Alternative in the draft EIS/EIR. The gen-tie line location was realigned after the draft EIS/EIR was published to resolve a potential conflict with the proposed Ten West Link Transmission Line alignment. The realignment resulted in a reduction in the length of the gen-tie from 4.18 mi to 3.94 mi.

The initial Project application was filed before June 30, 2009, prior to the adoption of the Solar Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States (Western Solar Plan) in 2013 or the Desert Renewable Energy Conservation Plan (DRECP) land use plan amendment in 2016. Therefore, this Project is being processed under the CDCA land use plan decisions in place prior to the adoption of the Western Solar Plan or DRECP land use plan amendment. As such, in addition to the decision on the ROW application, the BLM is also considering associated amendments to the CDCA Plan to accommodate the proposed action. The plan amendment decisions considered are:

1. The CDCA Plan would be amended to identify the Project’s development footprint as suitable for the proposed type of solar energy use.

2. The CDCA Plan would be amended to authorize a portion of the gen-tie corridor that is located outside of BLM’s Utility Corridor K and Section 368 Federal Energy Corridor 30-52.

The Project is located in Riverside County south of Interstate 10 (I-10) approximately 25 mi west of the City of Blythe. Surrounding features include the Mule Mountains to the west, agricultural lands to the east, a small (200 ac) solar PV facility to the north and open space to the south. The Project site is bounded on its northern, southwestern, and southeastern sides by existing linear infrastructure, including transmission lines, pipelines, communications lines, and access roads.

Table 1: Project Feature Vegetation Acreage Impacts (From Table 1 in the BA [West 2018] as revised by First Solar based on a new gen-tie alignment in April 2019).

Project Related Facilities	**Size or Number of Components**	**Desert wash woodland (ac)**	**Sonoran creosote bush scrub (ac)**	**Stabilized sand dune (ac)**	**Total Acres**
Solar Facility Inside Perimeter Fence	17.8 miles of security fence	0	2,694.36	3.64	***2,698***
Facilities Outside Perimeter Fence and Post-Construction ROW					
Gen-Tie Access Road	3.94 miles long by 140 feet wide	0	35.96	30.85	*66.81*
Communication Line	1.2 miles long by 20 feet wide	0.48	2.51	0.63	*3.62*
Subtotal		***0.48***	***38.47***	***31.48***	***70.43***
Facilities Outside Perimeter Fence, Temporary ROW for Construction					
Temporary Construction Staging Areas	2	0	37	0	*37*
Primary External Access Road	30' wide x 2,400 linear feet	0.57	0.70	0.36	*1.63*
Secondary External Access Road	20' wide x 12,099 linear feet	0	2.92	0	*2.92*
Gen-Tie Structure Sites	31, at 200' x 200' maximum	0	8.26	5.97	*14.23*
Gen-Tie Spur Roads	20' wide, aggregate total of 2,058 linear feet	0	0.17	0.30	*0.47*
Gen-Tie Pulling Sites	8, at 100' x 400'	0	1.84	1.84	*3.68*
Temporary Office Trailer Associated w/Gen-Tie Construction	1, at 200' x 200'	0	0.46	0	*0.46*
Laydown Area Associated w/Gen-Tie Construction	1, at 400' x 400'	0	0.86	0.98	*1.84*
Subtotal		***0.57***	***52.21***	***9.45***	***62.23***
Total Project Area		**1.05**	**2,785**	**44.57**	**2,831**

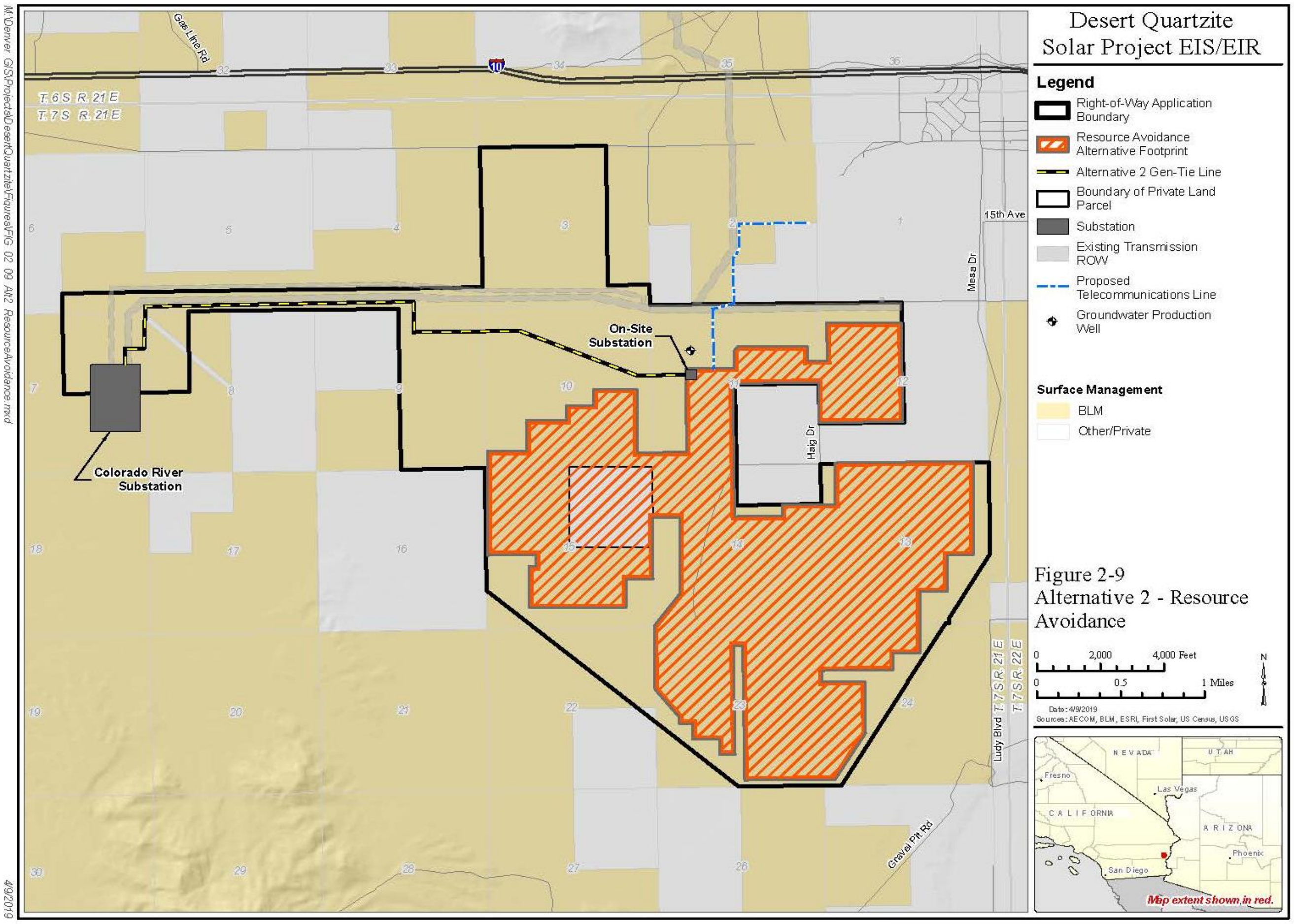

Desert Quartzite
Solar Project EIS/EIR
Legend
Right-of-Way Application Boundary
Resource Avoidance Alternative Footprint
Alternative 2 Gen-Tie Line
Boundary of Private Land Parcel
Substation
Existing Transmission ROW
Proposed Telecommunications Line
Groundwater Production Well
Surface Management
BLM
Other/Private
Figure 2-9
Alternative 2 - Resource Avoidance
0
2,000
4,000 Feet
0
0.5
1 Miles
N
Date: 4/9/2019
Sources: AECOM, BLM, ESRI, First Solar, US Census, USGS
NEVADA
UTAH
Fresno
Las Vegas
CALIFORNIA
ARIZONA
Phoenix
San Diego
Map extent shown in red.
Gas Line Rd
10
T. 6 S R. 21 E
T. 7 S R. 21 E
15th Ave
Mesa Dr
On-Site Substation
Colorado River Substation
Haig Dr
Ludy Blvd
T. 7 S R. 21 E
T. 7 S R. 22 E
Gravel Pit Rd
M:\Denver GIS\Projects\DesertQuartzite\Figures\FIG 02 09 Alt2 ResourceAvoidance.mxd
4/9/2019

Figure 1. Desert Quartzite Solar Project (from draft EIS/EIR, Figure 2-9).

The Project is expected to be constructed over a 25- to 48-month period, beginning in late 2019. The Project will occur over several phases, including pre-construction, construction, operations and maintenance, and decommissioning. After the preconstruction surveys, construction mobilization, and site preparation are completed, construction of the solar facility and gen-tie line will begin. During Project construction, the workforce is expected to average approximately 450 employees over the 25- to 48-month construction period, with a peak workforce of approximately 810 employees. Commercial operation is anticipated to begin in mid-2022.

Pre-construction

Pre-construction activities will include installation of desert tortoise exclusionary fencing and conducting pre-construction clearance surveys for desert tortoise and other sensitive species; clearing and grading of access roads, construction laydown, and parking areas; and setting up offices and site services. Desert tortoise exclusionary fencing and pre-construction clearance surveys will meet the standards established by the Service in the Desert Tortoise Field Manual (Service 2009). Pre-construction activities will also include relocation of any desert tortoises discovered in the Project boundary using procedures that will be outlined in the Desert Tortoise Translocation Plan (Translocation Plan). Details concerning the translocation of tortoises from the Project site will be provided in the Translocation Plan.

Construction

The solar facility (i.e., all facilities inside of the perimeter fence) would consist of construction of multiple blocks of solar PV panels mounted on fixed tilt or tracking systems and associated equipment, a project substation, an energy storage system, and a facilities building. A permanent perimeter fence with desert tortoise exclusion fencing will be constructed around the solar facility, which will occupy an area of approximately 2,698 ac (Table 1). Other onsite features include construction of meteorological stations, anemometer towers, and a guard shack.

Infrastructure outside of the solar facility perimeter fence (offsite facilities) include the construction of a 3.94-mile 230 kV gen-tie line, access roads, spur roads, pull sites, and laydown areas. Interconnection to the California Independent System Operator Grid will be via the Southern California Edison (SCE) operated transmission system at the Colorado River Substation.

Surface vegetation will be removed from portions of the 2,831-ac Project boundary in a staged fashion so that vegetation would not be removed until the onset of a given construction phase. Within the solar facility, vegetation would be mowed or disked under, mulched or composted, and retained to assist in erosion control and limit waste disposal. In some areas, native vegetation may be harvested for replanting to augment soil stabilization. Plant root systems would be left in place to provide soil stability except where grading and trenching are required for placement of solar module foundations, underground electric lines, inverter and transformer pads, road and access ways, and other facilities or as otherwise required to establish surface topography for drainage. To prevent impacting sensitive vegetation resources, the vegetation clearance will be conducted in accordance with procedures outlined in the Project's Vegetation Resource Management Plan, which will be developed in coordination with the BLM per conservation measure 12 below. This plan will provide guidelines for mitigating impacts to rare plants and other sensitive vegetation resources.

Graded, graveled, all-weather roads will be required in selected locations on the Project site during construction to bring equipment and materials from the staging areas to the construction work areas. These roads, which include approximately 1.2 mi of solar facility access roads that would be stabilized with gravel and approximately 112.9 mi of solar facility access roads that would be compacted native soil material, will be maintained for the 30-year life of the Project. All-weather access roads will also be installed outside of perimeter fencing for secondary access and 100-foot (ft) long spur roads will be installed off 16th Avenue to access the Project's gen-tie poles. Improvements to 16th Avenue may be required to preserve existing uses of the road. For a more detailed project description, refer to the BA (West 2018).

Operations and Maintenance

Following completion of Project construction, operation and maintenance (O&M) of the solar facilities and associated gen-tie line will commence and is anticipated to continue for the 30-year life of the project. Within the fenced area, project O&M activities will generally include road maintenance; vegetation restoration and management; scheduled maintenance of inverters, transformers, and other electrical equipment; and occasional replacement of faulty modules or other site electrical equipment. The access roads will be regularly inspected, and any degradation due to weather or wear and tear will be repaired. The desert tortoise exclusionary fencing located at the base of or outside the Project's perimeter fence will be regularly inspected (see below for a description of inspections), and any compromised areas of the fence will be repaired within 48 hours of discovery. Dust palliatives will be applied on dirt access roads as necessary once every 2 to 5 years. Washing of solar panels is expected to occur up to twice per year over the planned 30-year operation of the Project. Panel damage can generally be detected remotely and repaired as needed. If damaged modules are discovered during panel washing, they will be replaced as needed as well.

Five full-time workers, including O&M and security personnel, would staff the Project during its O&M phase. Staff would access the Project site from I-10 to Route 78 south via Exit 236, and then west on 16th Avenue/Seeley Avenue to the site access gate. These staff would account for up to five round trips per day. Up to 10 deliveries per day are expected during the O&M phase.

Outside of the fenced area, O&M activities will be conducted within the 140-ft gen-tie ROW. Routine activities associated with the gen-tie line and access road will include repair or replacement of equipment damaged by wind, dust, or accident; access road grading and repairs to drainage structures to maintain a drivable surface; and repair of the perimeter security fence and desert tortoise exclusion fence. These activities are expected to occur throughout the year, as needed. O&M activities will be performed using existing Project roads.

Decommissioning

The planned operational life of the proposed Project is 30 years. BLM requires that a Decommissioning and Reclamation Plan be prepared and put into effect when permanent closure of the facility occurs. BLM will review and approve the Decommissioning and Reclamation Plan prior to the permanent closure and decommissioning of the facility. The procedures provided in the Decommissioning Plan would be developed to ensure compliance with applicable laws and regulations, and to ensure public health, safety, and protection of the environment. The Decommissioning Plan would be submitted to the BLM for review and approval prior to a planned closure. When the BLM begins to consider decommissioning, they would contact the Service to determine if additional consultation, pursuant to section 7(a)(2) of the Act, would be appropriate. Consequently, we will not analyze the potential effects of decommissioning on the desert tortoise in this biological opinion.

Desert Tortoise Translocation

The Applicant will develop a final Translocation Plan that requires approval by the Service and CDFW prior to the initiation of any ground-disturbing construction activities. The Translocation Plan will incorporate the Service's draft desert tortoise translocation guidance (Service 2017c), as appropriate for the Project, and will include detailed descriptions of how and where tortoises found on the Project site and along the security fence and gen-tie lines will be translocated. The Translocation Plan will include maps identifying the recipient sites, a description of how disease prevalence of resident tortoises at the recipient sites will be documented, and how translocated tortoises will be monitored.

A translocated tortoise is defined as any desert tortoise that has been moved more than 984 ft from a project's action area to an offsite recipient site. Tortoises that are repositioned a few feet out of immediate harm's way are not considered translocated (Service 2017c). If translocation is necessary, health assessments must be performed on desert tortoises in the recipient populations, according to the most recent protocols, prior to translocating tortoise into these areas (see health assessment protocols, Service 2017c or most recent version available). Additional health assessments of the recipient and control tortoises (if warranted), not including collection of biological samples if previously collected within 1 year, should occur during the same season as the translocation. These initial health assessments will serve as the baseline condition to compare post-translocation assessments.

Conservation Measures (CM)

The Project includes conservation measures that will be implemented to avoid, minimize, and offset potential adverse effects to the desert tortoise. These measures were developed in coordination with the BLM, CDFW, and Applicant and will be implemented by the BLM and Applicant as part of the proposed action.

CM 1. BLM Environmental Compliance Manager: The BLM Environmental Compliance Manager (ECM) will oversee the implementation of all Project desert tortoise conservation measures, work directly with the Authorized Biologist, and retain the authority to halt any site mobilization, ground disturbance, grading, boring, trenching and operation activity that is in violation of the conservation measures, or if a desert tortoise wanders into a work site area. The ECM will be responsible for facilitating implementation of the environmental conditions of the Project plans and approvals and for coordinating compliance with the Service, where required.

CM 2. Authorized Biologist Qualifications: The Project Applicant will assign at least one desert tortoise Authorized Biologist(s) to the Project. The Applicant will submit a résumé for each proposed Authorized Biologist, with at least three references and contact information, to the BLM authorized officer for confirmation that applicant meets the minimum qualifications. The Authorized Biologist(s) must meet the following minimum qualifications:

a. Bachelor’s degree in biological sciences, zoology, botany, ecology, or a closely related field.

b. Thorough and current knowledge of desert tortoise behavior, natural history, ecology, and physiology, and demonstrate substantial field experience and training to safely and successfully conduct their required duties.

c. Three years of experience in field biology.

d. Have at least 1 year of field experience with biological resources found in or near the Project area.

e. Meet the Service’s current Authorized Biologist qualifications criteria (Service 2009), demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the Service.

f. Possess a California Endangered Species Act (CESA) Memorandum of Understanding pursuant to California Fish and Game Code §2081(a) for desert tortoise.

CM 3. Authorized Biologist Responsibilities: Authorized Biologists for the Project will be responsible for knowing the latest information on Service protocols and guidelines for the desert tortoise and have the knowledge and experience to conduct all of the activities listed in section 3.1 of the Service’s Desert Tortoise Field Manual (Service 2009). The Authorized Biologist will meet Service qualification requirements and will ensure proper implementation of conservation measures outlined in this biological opinion. If any desert tortoise is to be captured, relocated, or otherwise handled, the Project Applicant will submit the names and qualifications of proposed Authorized Biologists to the Service, CDFW, and BLM for review no less than 30 days prior to the beginning of any ground-disturbing activities implemented during any phase of the Project. Replacement Authorized Biologists will also require agency approval. Authorized Biologists will also serve as mentors to train Desert Tortoise Monitors and should approve Monitors to conduct specific activities based on the Monitor’s demonstrated skills, knowledge, and qualifications. Direct supervision is always required for field and clearance surveys; direct supervision means that the Authorized Biologist has direct voice and sight contact with the Desert Tortoise Monitor. An Authorized Biologist is responsible for the outcome of all desert tortoise related activities for which the project is approved, including errors committed by Desert Tortoise Monitors. Authorized Biologists must also be able to perform the following duties:

a. Perform a basic assessment of the physical condition of desert tortoises (e.g., identify basic clinical signs of potential upper respiratory tract disease).

b. Maintain approved biosecurity protocols when working with desert tortoises, avoid cross-contamination of supplies and of desert tortoise individuals, and disinfect all sampling gear.

c. Move desert tortoises away from situations where they are in danger of injury or death.

d. Translocate desert tortoises prior to implementation of a project.
e. Successfully rehydrate desert tortoises, if necessary.

The Authorized Biologist(s) will submit a completed copy of the Desert Tortoise Authorized Biologist Qualifications Form to the BLM ECM for review no less than 30 days prior to the beginning of any activity that could cause take of a desert tortoise in accordance with Section 7(o)(2) of the Act. A copy of the form can be found in section 3.1 of the Service's (2009) Desert Tortoise Field Manual, available on the Internet at *https://www.fws.gov/nevada/desert_tortoise/documents/field_manual/Desert-Tortoise-Field-Manual.pdf.*

The Project Applicant will ensure that an Authorized Biologist and Desert Tortoise Monitors, if necessary, will be on site during all Project construction, decommissioning, and other Project activities that could result in take of a desert tortoise. The Authorized Biologist and Desert Tortoise Monitors will have the authority to halt any site mobilization, ground disturbance, grading, boring, trenching, and operation activity that is in violation of the conservation measures or Project minimization measures, or if a desert tortoise wanders into a work site area. If a tortoise enters an active work area, it will be given up to 30 minutes to move on their own accord, at which point the Authorized Biologist will move the animal from harm's way in a manner consistent with handling guidelines (Service 2009) and the approved project Desert Tortoise Translocation Plan. If the Authorized Biologist is unavailable for direct consultation, the Desert Tortoise Monitor will act on behalf of the Authorized Biologist. Work will proceed when the tortoise is out of harm's way.

The Authorized Biologist will document any incident occurring during Project activities that is in non-compliance with the conservation measures stated in this biological opinion. The Authorized Biologist and BLM ECM will ensure that actions are implemented by appropriate staff (e.g., Desert Tortoise Monitors) to correct any non-compliance issue. The Authorized Biologist or Desert Tortoise Monitor will document all corrective actions. The following incidents will require immediate cessation of the Project activities causing the incident:

a. Imminent threat of injury or death to a desert tortoise.

b. Unauthorized handling of a desert tortoise, regardless of intent.

c. Operation of construction equipment or vehicles outside of areas secured with desert tortoise fencing without a Desert Tortoise Monitor present, except on designated roads.

d. Conducting any construction activity without an Authorized Biologist or Desert Tortoise Monitor present where one is required.

CM 4. Desert Tortoise Monitor Responsibilities: Desert Tortoise Monitor(s) designated for the Project will have a solid understanding of the conservation measures in this biological opinion and Service guidelines on desert tortoise surveys and handling procedures. Desert Tortoise Monitors will assist the Authorized Biologist in conducting surveys and in monitoring site construction mobilization activities, construction related ground disturbance, grading, boring or trenching as necessary. Monitors assist Authorized Biologists during surveys and serve as apprentices to acquire experience. Monitors may not conduct field or clearance surveys or other specialized duties of the Authorized Biologist unless directly supervised by an Authorized Biologist; “directly supervised” means the Authorized Biologist has direct voice and sight contact with the Monitor.

CM 5. Desert Tortoise Translocation Plan: Before the BLM issues a Notice to Proceed, the Project Applicant will develop a final Mojave Desert Tortoise Translocation Plan (Translocation Plan) that follows the Service’s most recent translocation guidance and requires approval by the BLM, Service, and CDFW. The Translocation Plan is a document that provides specific details of the proposed translocations and post-translocation monitoring, per the Service’s Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance (Service 2017c).

CM 6. Desert Tortoise Exclusionary Fencing: In areas where protocol and clearance surveys are required, prior to construction or commencement of any long-term activity that is likely to adversely affect desert tortoises, desert tortoise exclusion fencing will be installed around the perimeter of the Project’s activity footprint, excluding the gen-tie line, in accordance with the Desert Tortoise Field Manual (Service 2009) or most up-to-date Service protocol. Temporary exclusionary fencing may be installed for specific construction activities that do not require permanent desert tortoise exclusion. During fence construction and for a minimum of 1 year after the fence is completely installed, the Authorized Biologist or Desert Tortoise Monitor will monitor the fence perimeter to ensure desert tortoise are not stranded along the fence. Monitoring of the fence line will be conducted when temperatures reach and exceed 95 degrees Fahrenheit.

The exclusionary fence will incorporate shade structures spaced at a minimum 1,000 ft apart. Shade structures will be built with polyvinyl chloride (PVC) pipe or other material durable enough to last for the life of the project. Cardboard concrete forms should not be used. Each shade structure will consist of a 6-ft length piece of 12-inch (in) pipe split down the middle covered with 3-4 in of soil and rocks to insulate the interior of the structure. Shade structures will be checked after each rainfall to ensure they are clear of debris and functional.

The main and emergency entrances to the Project will be fitted with a cattle guard, gate, or other appropriate device to prevent the entry of tortoises. The cattle guards will be positioned at the perimeter, such that they are connected to the tortoise exclusion fence, to ensure that there are no gaps that would allow access to the facility by tortoises. The fence installation will be monitored by the Authorized Biologist or Desert Tortoise Monitor, under supervision from the Authorized Biologist, who will ensure stipulations provided in the Service's (2009, Chapter 8) guidance for tortoise exclusionary fencing are met. Throughout the construction phase, the tortoise exclusionary fence will be checked regularly and immediately after major rainfall events to ensure its integrity. Repairs will be made within 48 hours of discovery to prevent a tortoise from entering the site. If a tortoise is encountered along the inside or outside of the fence, protocols outlined in the approved Translocation Plan will be followed. Shade structures will be placed at regular intervals along the inside and outside of the tortoise fencing to provide shelter for tortoises that encounter the fence. Shelters on the inside of the fence will be removed after clearance surveys are performed.

CM 7. Desert Tortoise Clearance Survey: After the pre-construction survey has been completed and following installation of exclusionary fencing, the Project applicant will ensure that clearance surveys for tortoises are conducted within the perimeter of the exclusionary fence by the Authorized Biologist and Desert Tortoise Monitors under their supervision. The surveys will be conducted in accordance with stipulations in the Service's (2009, Chapter 6) guidance, which include conducting pedestrian belt transects at a maximum of 16-ft spacing, using tighter spacing in areas of dense vegetation, and conducting at least two consecutive perpendicular passes without finding a large desert tortoise (greater than 180 millimeter [mm] midline carapace length [MCL]) or new active sign, at which time the area is considered cleared and construction may commence. If any tortoises are found during the clearance survey, the Authorized Biologist will translocate the tortoise in accordance with the Translocation Plan.

CM 8. Monitoring of Project Activities in Unfenced Areas: To avoid or minimize the potential for take of desert tortoises along the gen-tie line or any other Project elements that are unfenced, the Project applicant will ensure that the Authorized Biologist or Desert Tortoise Monitors under their supervision perform daily monitoring of Project activities that involve the use of heavy equipment or vehicles during construction and O&M phases of the Project. This will include monitoring of the installation of the permanent tortoise exclusionary fence. For any Project activity that occurs outside of the exclusionary fence, the following measures will be implemented:

a. No more than 30 days prior to the planned activity, the Project applicant will ensure that a desert tortoise survey be conducted in the work area and all signs of desert tortoise mapped.

b. Desert Tortoise Monitors will be onsite during construction and O&M activities to ensure that tortoises and tortoise burrows outside of the exclusionary fence are avoided.

c. Vehicles parked in desert tortoise habitat will be inspected immediately prior to being moved. If a tortoise is found beneath a vehicle, it will be given up to 30 minutes to move of its own accord. If it does not, the Authorized Biologist will move the animal from harm's way following the handling guidelines outlined in the Service's Desert Tortoise Field Manual (2009).

d. Identified desert tortoise burrows that cannot be avoided in work areas will be excavated prior to initiating construction activities. The burrow excavation will be performed by the Authorized Biologist using hand tools to determine if it is occupied by a tortoise or contains eggs. Burrows of other species will also be inspected and if the Authorized Biologist determines it could hide a tortoise, it will be excavated.

CM 9. Worker Environmental Awareness Program: All personnel involved with any phase of the Project will receive Worker Environmental Awareness Program training prior to initiation of activities. This training will be presented so that all personnel have an equal opportunity to understand all written and spoken material. The Worker Environmental Awareness Program will cover the entire project area, for all phases of the project, for the life of the project and must meet the approval of the BLM, Service, and CDFW prior to being implemented. The program will include information concerning:

a. The biology and ecology of special-status species (including but not limited to desert tortoise, Mojave fringe-toed lizard, endangered or threatened birds, migratory birds, and other special status species).

b. Desert tortoise conservation measures and legal protections.

c. The definition of "take" and associated penalties.

d. Information on the legal protections for protected resources and the penalties for violation of Federal and State laws for non-compliance.

e. Specific conservation measures for avoiding and minimizing effects during all project phases, including but not limited to resources buffers, waste management, speed limits, etc.

f. Reporting requirements and measures to follow if protected resources are encountered, including potential work stoppage and requirement for notification of the Authorized Biologist.

g. Reporting procedures to be implemented in case of encounters with desert tortoise and other special status species, or non-compliance with project-related stipulations.

h. The biology and distribution of common ravens, how their populations have increased significantly due to human subsidies, how their predation has affected desert tortoise populations, and measures to reduce human subsidies during Project activities.

i. Other potential subsidized predators and avian scavengers.

j. Project-specific measures pertaining to discouraging raven presence.

k. Responsibilities of workers and biologists.

l. Reporting procedures to be implemented for documenting raven and other subsidized predator occurrences, including nest locations, instances of scavenging of roadkill or other animal carcasses in the Project site and immediate vicinity, or non-compliance with Project-related stipulations.

m. Identification of common weeds and measures to prevent the spread of invasive weeds.

CM 10. Raven Management Plan: The Project applicant will develop and implement a Raven Management Plan to address activities that may occur during the pre-construction, construction, and O&M phases of the Project that may attract common ravens (*Corvus corax*), a nuisance species that is a subsidized predator of desert tortoises and other sensitive species in the Project vicinity. The measures contained in the Raven Management Plan will be designed to:

a. Identify conditions associated with the Project that might provide raven subsidies or attractants.

b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities.

c. Describe control practices for ravens.

d. Address monitoring during construction and for the life of the Project, and discuss reporting requirements.

The Project applicant will submit payment to the Project sub-account of the Renewable Energy Action Team (REAT) Account held by the National Fish and

Wildlife Foundation (NFWF) to support the Service's Regional Raven Management Program. The one-time fee will be as described in the cost allocation methodology or more current guidance as provided by the Service or CDFW. The contribution to the regional raven management plan will be $105 per acre impacted.

CM 11. Integrated Weed Management Plan: The Project applicant will develop and implement an Integrated Weed Management Plan that describes measures to prevent, mitigate, and control the establishment and spread of weeds during all phases of the Project. The Integrated Weed Management Plan will provide descriptions of the types and distribution of weeds in the Project area, assess risk of weed establishment and spread based on species occurrences and Project activities, and outline effective control measures and monitoring efforts to reduce their establishment and spread, which also will be described in the Worker Environmental Awareness Program.

CM 12. Vegetation Resources Management Plan: The Project applicant will develop and implement a Vegetation Resource Management Plan that provides guidance and describes protocols for the salvage, propagation, and transplantation of sensitive plant species during implementation of the Project. The Vegetation Resource Management Plan will include descriptions of sensitive plant species within the Project site; criteria for determining whether an individual plant is appropriate for salvage and transport to a local nursery or transplanted in an adjacent mitigation area identified by a qualified botanist; a description of the equipment and methods for salvage, propagation, transport, and planting; procedures for marking and flagging sensitive plants during preconstruction clearance surveys; requirements for storage and/or pre-planting; descriptions of proposed transplantation sites identified by a qualified botanist that is approved by the BLM; and guidance for monitoring, maintaining, and reporting the success of transplanted plants.

CM 13. Habitat Restoration Plan: The Project applicant will develop and implement a Habitat Restoration Plan that describes the baseline vegetation conditions on the Project, including natural vegetation communities, regulatory and biological considerations related to their restoration and revegetation, and methods to be implemented in restoring areas disturbed by Project activities. The Habitat Restoration Plan will provide guidance for mitigating Project impacts to vegetation resources and implementing a successful restoration program with the goal of returning areas disturbed by Project activities to pre-project conditions. The Habitat Restoration Plan will complement the Integrated Weed Management Plan and Vegetation Resource Management Plan, and will describe measures that will be implemented to restore native vegetation communities following disturbance by Project activities. The Project will avoid jurisdictional drainages as much as practicable and therefore no restoration of these areas likely will be required.

However, if drainages are to be impacted, construction and restoration will be in accordance with a Lake and Streambed Alteration agreement issued by CDFW. The success of the Habitat Restoration Plan will be achieved through consideration of and coordination with the Integrated Weed Management Plan and Vegetation Resource Management Plan, as success of the Habitat Restoration Plan will only be achieved by ensuring the natural vegetation communities being restored do not contain invasive, nonnative weeds and contain salvaged plants and propagules from special status plants.

CM 14. Offsite Desert Tortoise Habitat Acquisition Plan: To fully mitigate for habitat loss and potential take of desert tortoise in compliance with the California Endangered Species Act (CESA) of 1970, the Project applicant will provide compensatory mitigation at a 1:1 ratio for impacts to approximately 2,831 ac (final Project area) within the proposed project boundary. For the purposes of this measure, the Project area means all lands directly disturbed in the construction and operation of the Project, including all linear features, as well as undeveloped areas inside the Project’s boundaries that will no longer provide viable long-term habitat for the desert tortoise.

To satisfy this measure, the Project Applicant will acquire, protect and transfer one acre of desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands. In lieu of directly acquiring conservation lands, the Project Applicant may satisfy the requirements of this measure by depositing funds into the REAT Account established with the NFWF. The compensation lands selected for acquisition in fee title or in easement will be within the Chuckwalla Critical Habitat Unit or, if sufficient land is unavailable, in other locations within the Colorado Desert Recovery Unit. All acquired compensation lands must be located outside of a Development Focus Area as defined under the DRECP. Proposed conservation acquisitions must be approved by the BLM, Service, and CDFW.

Selection criteria for compensation lands include the following:

a. Located within the Colorado Desert Recovery Unit.

b. Located outside of a Development Focus Area near larger blocks of lands that are either already protected or planned for protection.

c. Connected to lands with Mojave desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover.

d. No history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible.

e. Low densities of invasive species.

For additional criteria and details on criteria for compensation lands, see mitigation measure WIL-4 in the draft EIS/EIR.

CM 15. Biomonitoring of Construction, Operation, and Decommissioning Activities: The Project Applicant will develop and implement a Biological Resources Mitigation and Monitoring Plan that summarizes requirements for complying with measures, stipulations, and other Project requirements contained in the this biological opinion, the Project's EIS/EIR, Project plans, or other documents that pertain to avoiding, minimizing, or mitigating impacts to desert tortoises and other sensitive species during all phases of the Project. The Biological Resources Mitigation and Monitoring Plan will be reviewed and approved by the BLM, Service, and CDFW.

CM 16. Speed Limits and Traffic Regulations: Vehicular traffic during Project construction, O&M, and decommissioning shall be confined to existing designated routes of travel to and from the Project site; cross-country vehicle and equipment use outside designated work areas shall be prohibited. To minimize the likelihood for vehicle strikes of tortoises and other species during construction, a speed limit of 25 miles per hour (mph) will be established for travel on all Project access roads cleared by desert tortoise protocol surveys. Roads not cleared by protocol surveys will be limited to 15 mph. Signs will be posted at appropriate locations (e.g., at Arizona crossings of drainages or other likely crossing points) to remind drivers to be aware of the potential for desert tortoise and other wildlife moving across the roadways.

CM 17. Procedures for Avoiding Wildlife Pitfalls: The Project Applicant will ensure that trenches, bores, and other excavations outside of fenced areas shall be managed according to the following options: sloped at a 3:1 ratio at the ends or provided with escape ramps as wildlife exit points; covered completely to prevent wildlife access; or fully enclosed with desert tortoise exclusion fencing. An Authorized Biologist or Desert Tortoise Monitor will inspect all excavations that are not within desert tortoise exclusion fencing on a regular basis (several times per work day) and immediately prior to filling of the excavation. If project personnel discover a desert tortoise in an open trench, the Authorized Biologist will move it to a safe location as described in the Translocation Plan.

CM 18. Limit Disturbance Areas: The Project Applicant will confine all construction activities, project vehicles, and equipment within the delineated boundaries of construction areas that have been cleared of desert tortoises. The Project Applicant will confine all work areas to the smallest practical area, considering topography, placement of facilities, location of sensitive resources, public health and safety, and other limiting factors. The Project Applicant will use previously disturbed areas to the extent feasible. Existing roads will be used wherever possible to avoid unnecessary impacts. New and existing roads that are planned for either construction or widening will not extend beyond the planned impact area and will minimize surface disturbance in native habitats, where practical. Road construction and improvements will be in accordance with BLM, Riverside County Fire Department, and Riverside County Transportation Department standards.

CM 19. Procedures for Erosion Control: Standard erosion control measures will be implemented for all phases of the Project where sediment run-off from exposed slopes threatens to enter “Waters of the State.” Sediment and other flow-restricting materials shall be moved to a location where they cannot be washed back into the stream. All disturbed soils and roads within the Project site will be stabilized through the use of gravel, compaction, water, approved dust palliatives, or other approved methods to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential.

CM 20. Hazardous Material Management: All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Project Applicant will design and implement the Project’s Hazardous Materials Management Plan, detailing how hazardous spills will be immediately reported, cleaned up, and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment will take place only at a designated area. Service and maintenance vehicles will carry a bucket, shovel, and pads to absorb leaks or spills.

CM 21. Trash Management: All garbage associated with all phases of the Project will be contained in wildlife-proof containers to prevent the introduction of food resources that could potentially attract or support ravens, coyotes, and other predators or scavengers. Secure, wildlife-proof self-closing waste bins will be used for all organic waste. To reduce the possibility of ravens or other scavengers from ripping into bags and exposing the garbage, plastic bags containing garbage will not be left out for pickup. All such waste material must be in secure waste bins or dumpsters at all times.

CM 22. Road-killed Animal Management and Desert Tortoise Injury and Mortality: The Project Applicant will dispose of any animal roadkill carcasses on the Project site and along access roads as encountered. Because predators are capable of locating and then excavating buried remains, roadkill carcasses will be deposited into predator-proof trash bins or by another secure method until proper disposal is undertaken.

a. All inadvertent deaths of special status species and desert tortoise will be reported to the appropriate Project representative, including road kill. If a desert tortoise is found as a road mortality, BLM, the Service, and CDFW will be notified verbally and in writing within 48 hours of discovery. Species name, physical characteristics of the animal (sex, age class, length, weight), and other pertinent information will be noted and reported. Injured animals will be reported to CDFW or the Service, and the Project Applicant will follow instructions that are provided by CDFW or the Service. If CDFW or the Service cannot be immediately reached, the animal should be taken to a veterinary hospital.

CM 23. Procedures for Water Application for Dust Control: The Project Applicant will ensure water is applied to the construction area, dirt roads, trenches, spoil piles, and other areas where ground disturbance has taken place to minimize dust emissions and topsoil erosion, and to ensure that water does not pool or pond for more than 20 minutes, reducing the potential to attract common ravens.

CM 24. Monitoring and Reporting Schedule: Encounters with desert tortoises will be immediately reported to an Authorized Biologist or Desert Tortoise Monitor. The Authorized Biologist will maintain a record of all desert tortoises encountered during construction and decommissioning activities. Information recorded for each desert tortoise will include the following: the location; date of observation; general condition of health and apparent injuries and state of healing; location of damaged area of fence; if moved, location moved from and location moved to and whether the desert tortoise voided its bladder; and diagnostic markings (i.e., identification numbers or marked lateral scutes).

a. The Project Applicant will provide monthly reports to the BLM, the Service, and CDFW throughout the construction and decommissioning phases that summarize the implementation of Project measures pertaining to desert tortoise management. The reports will be prepared by the Authorized Biologist.

b. The Project Applicant will provide annual reports to the BLM, the Service, and CDFW throughout the construction and decommissioning phases, and 1 calendar year following completion of construction and decommissioning, that summarize the implementation of Project measures pertaining to desert tortoise management. The reports will be prepared by the Authorized Biologist.

Action Area

The implementing regulations to section 7(a)(2) of the Act describe the action area as all areas affected directly or indirectly by the Federal action and not merely the immediate area affected by the proposed project (50 CFR §402.02). The action area is the area of potential direct or indirect effects of the proposed action and any interrelated or interdependent human activities; the direct and indirect effects of these activities include associated physical, chemical, and/or biological effects of considerable likelihood (Service and NMFS 1998). Indirect effects are those that are caused by the proposed action and are later in time but are still reasonably certain to occur (Service and NMFS 1998). Analyses of the environmental baseline, effects of the action on the species and designated critical habitat, cumulative effects, and the impacts of the incidental taking, are based upon the action area as determined by the Service (Service and NMFS 1998).

The Project will directly impact approximately 2,831 ac of desert tortoise habitat. For the purposes of this biological opinion, the Project is defined as the area inside and outside of the permanent fence line that will be disturbed due to construction and O&M activities of the solar facility and linear facilities (access roads, utility corridor, and gen-tie line; see Table 1). Along with the linear facilities outside the solar facility, the action area also includes a surrounding distance of up to 984 feet outside of the Project boundary where any tortoises will be moved out of harm's way to avoid injury from construction or O&M-related activities. Since regional desert tortoise augmentation sites have not been identified for the Colorado Desert Recovery Unit (Service 2017c), to accommodate the potential translocation of desert tortoise from the Desert Quartzite Project site, the action area also includes the Desert Sunlight solar project's recipient (translocation) site, which includes 4,612 ac of lands managed by the BLM (Ironwood 2011). Finally, the action area encompasses conservation areas that will be acquired and potentially restored or enhanced as needed to offset the destruction of desert tortoise habitat resulting from construction and O&M of the Project. The acquisition, potential restoration or enhancement, management, and monitoring of these conservation areas are expected to have only beneficial effects to tortoises. The particular locations of these conservation areas have not yet been identified, but approximately 2,831 ac will be acquired within the desert tortoise Chuckwalla Critical Habitat Unit or, if sufficient land is unavailable there, in other locations within the desert tortoise Colorado Desert Recovery Unit (see CM-14 above).

ANALYTICAL FRAMEWORK FOR THE SECTION 7(A)(2) DETERMINATIONS

Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the Environmental Baseline, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action, which determine the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) the Cumulative Effects, which evaluate the effects of future, non-Federal activities in the action area on the species.

As such, in accordance with policy and regulation, the jeopardy determination is made by evaluating the aforementioned components to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild by reducing the reproduction, numbers, and distribution. Desert tortoise designated critical habitat does not occur in the action area so no adverse modification to desert tortoise designated critical habitat is expected to occur with implementation of the proposed action.

STATUS OF THE SPECIES AND CRITICAL HABITAT

The following summarizes information about the desert tortoise that was discussed in detail in the Service's Programmatic Biological Opinion for Activities in the California Desert Conservation Area (Service 2017a). Please refer to that document as well as the revised recovery plan (Service 2011) and our 5-year review (Service 2010) for additional detailed information about these topics and the species' description, life history, and habitat affinities.

The Service listed the desert tortoise as threatened in 1990 (Service 1990) and the threats described in the listing rule and both recovery plans (Service 1994, 2011) continue to affect the species. The most apparent threats to the desert tortoise are those that result in mortality and permanent habitat loss across large areas, such as urbanization and large-scale renewable energy projects, and those that fragment and degrade habitats, such as proliferation of roads and highways, off-highway vehicle activity, and habitat degradation caused by nonnative invasive plant species. The desert tortoise requires 13 to 20 years to reach sexual maturity, has low reproductive rates during a long period of reproductive potential, and individuals experience relatively high mortality early in life (Service 2011).

Reproduction, Numbers, and Distribution

Reproduction

Desert tortoise reproduction is influenced by a number of factors, some of which include the number of reproducing females across the range, home range size and location, and resource availability and quality (Service 2011, Sieg *et al.* 2015). Female tortoises typically lay fewer eggs per clutch but produce multiple clutches per reproductive season, April through July (Lovich *et al.* 2015). Periods of increased rainfall, such as in El Nino years, can result in an increase in annual plant forage biomass resulting in an increase in annual egg production (Lovich *et al.* 2015). Young desert tortoises rely upon high-quality, low-fiber plants (e.g., native annual plants) with nutrient levels not found in the invasive nonnative plants that have increased in abundance across its range (Oftedal *et al.* 2002; Tracy *et al.* 2004). Compromised nutrition of young desert tortoises likely represents an effective reduction in recruitment by reducing the number of animals that reach adulthood (Drake *et al.* 2016). Consequently, the reproductive capacity of the desert tortoise may be compromised to some degree by the abundance and distribution of invasive weeds across its range; the continued increase in human access across the desert likely continues to facilitate the spread of nonnative plants and further affect the reproductive capacity of the desert tortoise.

Numbers

Range-wide monitoring, initiated in 2001 by the Service, is the first comprehensive attempt to determine the number of individuals, or densities of desert tortoises, in conservation areas across their range. The Desert Tortoise Recovery Office (Service 2015) used annual density estimates obtained from this sampling effort to evaluate range-wide trends in the density of desert tortoises over time. This analysis indicates that densities in the Northeastern Mojave Recovery Unit have increased since 2004, with the increase apparently resulting from increased survival of adults and sub-adults moving into the adult size class. The analysis also indicates the populations in the other four recovery units are declining. Desert tortoise densities in the Joshua Tree and Piute Valley conservation areas within the Colorado Desert Recovery Unit seem to be increasing, although densities in the recovery unit as a whole continue to decline.

Distribution

In the 5-year review, the Service (2010) concluded the distribution of the desert tortoise has not changed substantially since the publication of the original recovery plan in 1994 in terms of the overall extent of its range. However, desert tortoises have been removed from several thousand acres because of solar development and military activities, and large parts of suitable habitat within this range have been converted to other uses that no longer support desert tortoise. For example, urban development around desert cities, such as Las Vegas, Barstow, and Lancaster, has contributed to habitat loss throughout the range and desert tortoises have been essentially removed from the 18,197-acre southern expansion area at the Fort Irwin National Training Center (Service 2014). The development of large solar facilities has also reduced the amount of habitat available to desert tortoises. No solar facilities have been developed within desert tortoise conservation areas, such as Desert Wildlife Management Areas (DWMA), although such projects have occurred in areas that the Service considers important linkages between conservation areas, e.g., Desert Sunlight Solar Farm Project near Desert Center, California (Service 2012a).

Status of Critical Habitat

The Service designated about 6.5 million ac of critical habitat for the desert tortoise in portions of California, Nevada, Arizona, and Utah. The physical or biological features which constitute desert tortoise critical habitat include the following: (1) sufficient space to support viable populations within each of the recovery units and to provide for movement, dispersal, and gene flow; (2) sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; (3) suitable substrates for burrowing, nesting, and overwintering; (4) burrows, caliche caves, and other shelter sites; (4) sufficient vegetation for shelter from temperature extremes and predators; and (5) habitat protected from disturbance and human-caused mortality.

Summary

To summarize the range-wide condition of the desert tortoise, threats continue to adversely affect the species across the range, populations are in decline in four of the five recovery units, and while the distribution boundary has not changed, suitable habitat within that boundary has been reduced. The Service's goal to recover and delist the desert tortoise (Service 2011) is challenged by a number of factors but loss of suitable habitat that supports resource needs is one of the primary impediments to achieve recovery of desert tortoise, specifically the stated recovery action to protect existing populations and habitat (Service 2011).

In our 5-year review we recommended the status of the desert tortoise as a threatened species be maintained since the threats identified in the original listing rule continue to affect the species, with invasive species, wildfire, and renewable energy development coming to the forefront as important factors in habitat loss and conversion of suitable habitat to unsuitable (Service 2010). Since the completion of our 5-year review, we have issued several biological opinions that affect large areas of desert tortoise habitat because of numerous proposals to develop renewable energy within its range. In aggregate across the range of the desert tortoise, these projects will result in an overall loss of approximately 43,920 ac of habitat. We also predicted that the project areas supported up to 3,721 desert tortoises. Since 2017, 583 desert tortoises have been observed during construction of projects; most of these individuals were translocated from work areas, although some desert tortoises have been killed (Service 2017a). This trend of converting habitat into areas that are unsuitable for desert tortoise continues, constricting the species into a smaller portion of its range and further fragmenting habitat suitable for feeding, breeding, and sheltering.

Recovery

The revised recovery plan for the desert tortoise (Service 2011) lists three objectives and associated criteria to achieve delisting. The first objective is to maintain self-sustaining populations of desert tortoises within each recovery unit into the future, using the criterion of increasing rates of population change (λ) for desert tortoises (i.e., $\lambda > 1$) over at least 25 years (i.e., a single generation). This criterion is measured by extensive, range-wide monitoring across conservation areas within each recovery unit, and by direct monitoring and estimation of vital rates (recruitment, survival) from demographic study areas within each recovery unit. The second objective addresses the distribution of desert tortoises, with the goal of maintaining well-distributed populations of desert tortoises throughout each recovery unit. The criterion used to achieve this objective is an increasing distribution of desert tortoises throughout each conservation area over at least 25 years. The third objective is to ensure that habitat within each recovery unit is protected and managed to support long-term viability of desert tortoise populations. The criterion used to achieve this objective is to maintain no net loss in the quantity of desert tortoise habitat within each conservation area until population viability is ensured.

The revised recovery plan (Service 2011) also recommends connecting blocks of desert tortoise habitat, such as critical habitat units and other important areas to maintain gene flow between populations. Linkages defined using least-cost path analysis (Averill-Murray *et al.* 2013) illustrate a minimum connection of habitat for desert tortoises between blocks of core habitat and represent priority areas for conservation of population connectivity.

As indicated above, only one recovery unit, the Northeastern Mojave Recovery Unit, has demonstrated increased densities of desert tortoise since 2004, with the increase apparently resulting from increased survival of adults and more sub-adults moving into the adult size class. Desert tortoise populations in the other four recovery units are declining. Challenges to desert tortoise recovery include understanding why these populations are in decline and how ongoing threats, and the synergies of those threats, affect our ability to recover the species.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the consultation in progress.

The Project area is within the Colorado Desert Recovery Unit and is located on the Palo Verde Mesa between the Mule Mountains to the west and agricultural lands to the east, south of I-10 and approximately 25 mi west of the City of Blythe. The Project site is located outside the boundaries of any Area of Critical Environmental Concern (ACEC), DWMA, BLM wilderness area, or designated critical habitat for desert tortoise. The Chuckwalla DWMA for desert tortoise is located approximately twenty miles west of the Project site. The Project area is mostly flat, with elevations ranging from about 320 ft. to 475 ft.

Desert tortoises are affected to some extent by several access roads, agricultural operations, invasive nonnative plants, and potentially by predation from common ravens foraging, nesting, and roosting along existing transmission lines within the action area and elsewhere in the vicinity. Predation from coyotes is also potentially high due to a coyote population subsidized by the agricultural operations to the east of the Project. Ongoing land uses covered under previously issued biological opinions (see below) have allowed for additional take of tortoises and degradation of tortoise habitat in or near the Project area.

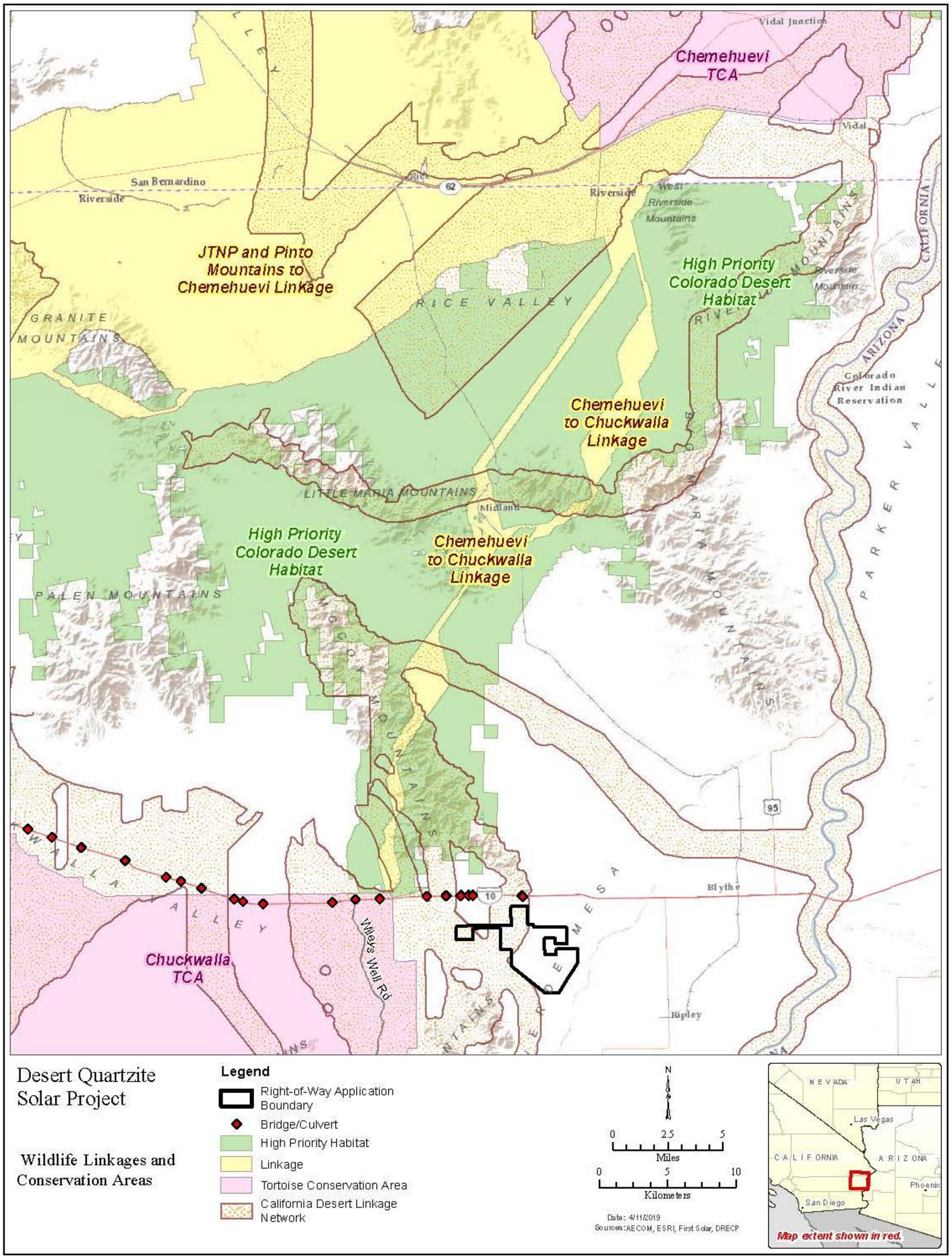
Past Consultations within the Action Area

The Service issued a programmatic biological opinion evaluating the effects of BLM's CDCA Plan Amendment for BLM's Northern and Eastern Colorado Desert (NECO) Plan (BLM 2002) on desert tortoise and its critical habitat on June 17, 2002, and as amended, on March 31, 2005, and November 30, 2007 (Service 2005, 2007). We found the BLM's plan guidance was not likely to jeopardize the continued existence of desert tortoise or adversely modify critical habitat. The programmatic biological opinion exempted take of desert tortoise for casual uses (e.g., recreation, mining, and OHV use), livestock grazing, and burro removal that BLM authorizes through approval of the CDCA Plan. Projects outside of these activity categories require separate consultation.

The Service issued five biological opinions exempting take of several species, including the desert tortoise, associated with transmission and gen-tie lines. These include the Blythe Energy line in 2005, the Desert Southwest line in 2006, the Devers to Palo Verde 2 Line in 2011, and 230-kV monopole transmission lines associated with the Blythe (2010) and McCoy (2013) solar plants located north of I-10. While issuance of biological opinions for these linear features has allowed or may allow for additional take of desert tortoises and degradation of habitat in the Project area, these biological opinions also included avoidance, minimization, and conservation measures that largely maintained the environmental baseline of the species.

The Service issued a programmatic biological opinion to BLM on July 20, 2012, regarding the landscape level effects of designating Solar Energy Zones (SEZs) and amending land use plans in six southwestern States (Arizona, California, Colorado, Nevada, New Mexico, and Utah) (Service 2012b). The Riverside East SEZ is the largest of the proposed SEZs in the six-State action area**,** with a total developable area of 147,910 ac. The Project is located within this Riverside East SEZ.

The Service issued a programmatic biological opinion evaluating the effects of the land use plan amendment for the DRECP on the desert tortoise and its critical habitat (Service 2016). The goal of the DRECP is to conserve and manage plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy projects within BLM-designated Development Focus Areas (DFAs). The DFAs are located in areas that have lower potential to support desert tortoises (Nussear *et al.* 2009). The DRECP also included criteria to site and design projects to maintain the connectivity for wildlife across I-10 through three north-south wildlife corridors that are within a 5-mile-wide linkage centered on Wiley's Well Road (Figure 2). The Service concluded that the land use plan amendment for the DRECP was not likely to jeopardize the desert tortoise or result in the destruction or adverse modification of its designated critical habitat. The action area analyzed for the Project in this biological opinion is within a DFA.



Date: 4/11/2019
Sources: AECOM, ESRI, First Solar, DRECP

Figure 2: Regional Linkages and Bridges and Culverts under I-10 near the Desert Quartzite Solar Facility.

In 2017, the Service (2017a) issued a programmatic biological opinion evaluating the effects to desert tortoise and its designated critical habitat from construction, operation, maintenance, and decommissioning activities covering a wide range of BLM management actions within the CDCA. Management actions associated with habitat restoration and enhancement, route repairs and closures, fence construction, recreation activities, mine leasing, and other land actions were analyzed. The Service concluded that these BLM management actions are not likely to jeopardize the desert tortoise or result in the destruction or adverse modification of its designated critical habitat.

In sum, the biological opinions listed above have authorized a relatively small amount of take within the large areas that they cover. Implementation of conservation measures similar to those included in this biological opinion minimizes the associated adverse effects of the taking of desert tortoise and impacts to designated critical habitat. Because the action areas defined for these projects narrowly intersect the action area analyzed for the Project in this biological opinion, only a relatively small portion of the total take associated with the above projects would coincide geographically with the proposed Project. However, the collective effect of these various project approvals has likely reduced desert tortoise population levels in portions of the action area, which could reduce the extent of population distribution and connectivity to an unknown degree.

Habitat Characteristics within the Action Area

The BRTR for the Project indicates that Sonoran Desert Scrub alliance covers approximately 98 percent of the Project area. This alliance is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), with scattered occurrences of cheese bush (*Ambrosia salsola*), brittlebush (*Encelia farinosa*), Emory's indigo bush (*Psorothamnus emoryi*), big galleta grass (*Hilaria rigida*), and occasional cactus species. Sand dunes onsite are stabilized and partially stabilized accumulations supporting an herbaceous alliance dominated by big galleta grass. Ten invasive nonnative plant species occur on the Project site, including Russian thistle (*Salsola tragus*), Saharan mustard (*Brassica tournefortii*), and Mediterranean grass (*Schismus barbatus*). Desert Dry Wash Woodland alliance is located in two distinct washes, comprising approximately 2 percent of the Project site. Dominant plants species include ironwood (*Olneya tesota*) and blue palo verde (*Parkinsonia florida*), with an occasional honey mesquite (*Prosopis glandulosa*).

Soils within the action area are dominated by gravely sands and sandy loams, and range from very fine sand to gravel. Soil data from the Natural Resources Conservation Service (NRCS) is not available in the northwest portion of the Project area. Desert pavement is present in the extreme northwest and southwest limits of the Project area. Human disturbances within the action area include off-highway vehicle (OHV) activity, fallow agricultural sites, existing utility corridors (i.e., overhead power transmission lines and underground petroleum pipeline), residential trash dumping and access roads for both utilities and fallow agriculture sites. A 160-ac inholding within the Project site is a historical jojoba farm that currently supports creosote bush scrub. The 160-ac site was either chained or bulldozed and is surrounded by bulldozed berms about 4 ft to 5 ft high.

Status of the Species in the Action Area

The action area is situated within the southeastern portion of the Colorado Desert Recovery Unit (Service 2011). From 2004 to 2014, the number of desert tortoises in conservation areas in the Colorado Desert Recovery Unit decreased by about 36 percent (Service 2017a).

The U.S. Geological Survey (USGS) developed a quantitative habitat model for the range of the Mojave population of desert tortoise, which includes the Colorado Desert Recovery Unit in California (Nussear *et al.* 2009). The model provides a measure of the statistical probability of desert tortoise occurrence and a geospatial depiction of known and potential desert tortoise habitat. To date, the USGS model is viewed as the best available data for predicting desert tortoise occurrence on a landscape scale; however, it does not account for site-specific and anthropogenic conditions across the landscape that affect habitat potential at a local scale. Based on the USGS model, the action area contains suitable desert tortoise habitat that ranges in low statistical probability of habitat potential (between 0.1 and 0.3), though these values do not reflect habitat degradation resulting from anthropogenic activities (Nussear *et al.* 2009). Based on surveys conducted in association with renewable energy projects within the southeastern portion of the Colorado Desert Recovery Unit, we consider that the area north of I-10 near the City of Blythe supports low abundance of desert tortoises (Service 2013, 2014).

On a regional scale, the action area is situated outside priority habitat and linkages for desert tortoise (Figure 2), based on the Nussear *et al.* (2009) habitat model and least cost paths modeled by Hagerty *et al.* (2011). On a local scale, desert tortoise connectivity is impaired by adjacent land uses and natural habitats, as the Project site is bounded by agricultural lands to the east and I-10 with associated berms to the north below we summarize the desert tortoise survey information based on the BA (West 2018) and on survey reports compiled in the BRTR (Ironwood 2014) and draft EIS/EIR. Full-coverage pre-project desert tortoise surveys were conducted consistent with Service protocols from March 25 to April 15, 2013. Per the protocol, surveys employed belt transects approximately 33 ft wide to provide 100 percent (full) coverage of the entire Project area. All tortoise sign, e.g., live tortoises (all age classes), shells, bones, scutes, scats, burrows, pallets, tracks, egg shell fragments, and courtship rings, were recorded (Figure 3).

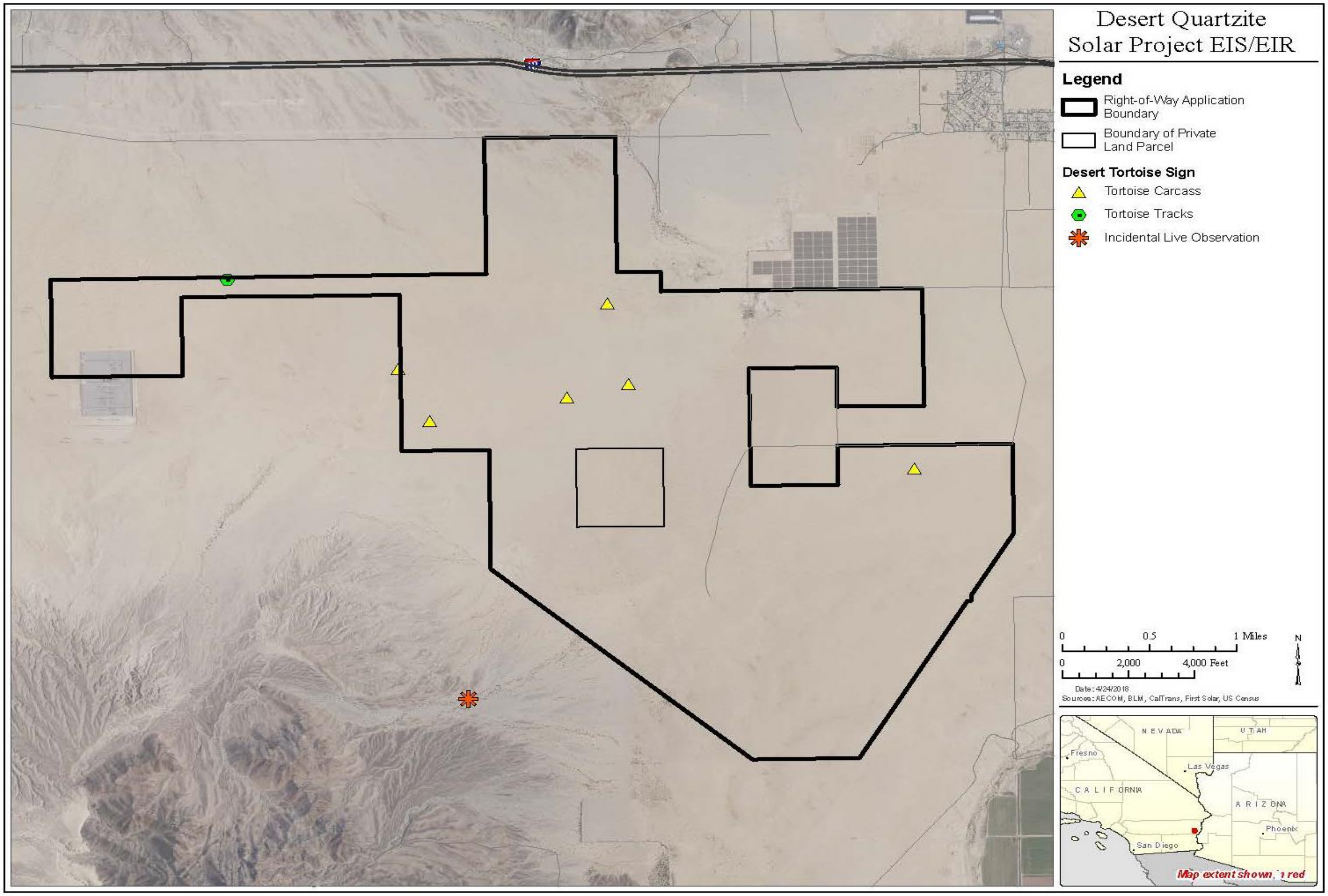


Figure 3: Desert Tortoise Sign Based on Pre-Project Surveys (Ironwood 2014).

Six carcasses, disarticulated and greater than 4 years old, were found within the survey boundary but no live tortoises were detected. One live tortoise was detected within the larger survey buffer area around the Project boundary during avian surveys. No desert tortoise burrows were detected during the surveys. There is no evidence of desert tortoise on the 160-ac private inholding, but protocol desert tortoise surveys were not conducted there.

Pre-project surveys represent a snapshot in time and the size and location of desert tortoise home ranges vary year to year (Berry 1986). Also, desert tortoise absence from specific areas is difficult to confirm since they hibernate in shelters for part of the year (Thompson 2004, MacKenzie *et al.* 2005). However, based on preliminary telemetry data associated with the proposed Crimson Solar Project (Hinderle 2019), there is a large population of desert tortoise (approximately 40 large tortoises) on the north and west sides of the Mule Mountains within the alluvial fans just outside of the action area. Because tortoise may occasionally move outside of their activity centers depending on the time of year and other factors (Sadoti *et al.* 2017), we anticipate some of those tortoise could occasionally move onto the Project area.

Protocol surveys are used to determine tortoise presence and calculate tortoise density on project sites. The calculation is based on the observation of live tortoises during pre-project surveys. However, pre-project protocol desert tortoise surveys for the Desert Quartzite Project did not detect live tortoises and indicated tortoise sign only. Therefore, to derive density of desert tortoise on the Project site, we will use alternative methods used in past consultations.

An alternative method of calculating density within the Project is to apply the calculation used in the amended biological opinion for the CDCA for the NECO planning areas (Service 2007). To derive density of desert tortoises outside the DWMAs and other conservation areas within the Colorado Desert Recovery Unit, we multiplied the average density of desert tortoises within these more protected areas in the recovery unit by 10 percent (Service 2007). This calculation is based on our professional opinion that densities outside DWMAs and other protected areas are generally lower based on habitat conditions, including elevation, rainfall, vegetation community composition, and other geographic variables that typically result in supporting fewer animals. Density of tortoises at the recovery unit level is based on line-distance sampling from 2004 to 2014. Mean density for the Colorado Desert Recovery Unit is 9.6 tortoises per square mile (Service 2015). Applying the reduced density of tortoises for areas outside protected areas (0.1 x 9.6 = 0.96 tortoises per square mi) to the solar facility footprint (2,831 ac / 640 ac = 4.4 square mi) yields a rounded estimate of four large tortoise that may occur in the Project footprint (4.4 square mi x 0.96 desert tortoises per square mi = 4.2).

Proposed Translocation Recipient and Control Site

The Service’s draft translocation guidance recommends translocating animals to regional augmentation sites (Service 2017c). However, an augmentation site for the Colorado Desert Recovery Unit has not been identified. Therefore, tortoises that need to be translocated from within the Project boundary will be translocated to the recipient site identified for the Desert Sunlight Project (Ironwood 2011). The general area of the Desert Sunlight Recipient Site (Recipient Site) is undeveloped and, therefore, not affected by extensive habitat destruction or degradation. The Recipient Site may be impacted to some extent by invasive nonnative plants and predation from common ravens foraging, nesting, and roosting along existing Metropolitan Water District (MWD) transmission lines that bisect the site. The site may also be impacted due to berms constructed to protect MWD's Colorado River Aqueduct. No designated critical habitat occurs in or near the Recipient Site. The density of tortoise on the Recipient Site is currently 5 tortoises per square mi (NER 2017), which is below the recommended density of 10 tortoises per square mi listed in our draft translocation guidance (Service 2017c). Based on information in the final report for the Desert Sunlight Translocation Plan, fatalities of tortoises due to translocation were not significantly different than those animals monitored on the control site (NER 2017). If an augmentation site is designated prior to start of construction of the Desert Quartzite Project, the Service will work with the Applicant, BLM, and CDFW to determine whether that augmentation site is a better alternative for tortoise conservation than the Recipient Site, and this biological opinion will be amended accordingly.

Based on pre-project survey data and our site density analysis, we do not anticipate this Project will need a control site. This conclusion considers previous translocation research that has demonstrated translocation to be an effective conservation tool (see Service 2017c) and the low density of large tortoises that may be found within the Project footprint. Because our current translocation guidance recommends that for each translocated tortoise, the same number of tortoises are tracked in a control site, monitoring of four tortoises in a control site will not likely result in statistically valid information to add to our current body of translocation knowledge (Field *et al.* 2007, Esque *et al.* 2010, Drake *et al.* 2009, Nussear *et al.* 2012, Farnsworth *et al.* 2015, Hinderle *et al.* 2015, Brand *et al.* 2016, Nafus *et al.* 2017). However, if more than four large tortoises are translocated from the Desert Quartzite solar facility, that will trigger a reinitiation of this biological opinion and we will reconsider whether a control site may be necessary for this Project at that time.

Conservation Lands

Habitat acquisition, with potential restoration or enhancement as needed, is proposed to offset the loss of tortoise habitat resulting from the Project. As described in CM 14, the compensation lands selected for acquisition will be within the Colorado Desert Recovery Unit, with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands. These future conservation lands will be conserved and managed in perpetuity for tortoises. Using available data on landownership and willing sellers, the Service has determined that a sufficient amount of privately owned desert tortoise habitat exists within the Colorado Desert Recovery Unit that will be available for acquisition.

The abundance of tortoises in potential conservation lands is unknown since the specific areas have not yet been identified. However, because acquisition will focus on areas connected to lands with tortoise habitat equal to or better in quality than the Project footprint, we anticipate that these conservation lands will contain suitable habitat that is currently occupied or likely to be occupied by desert tortoise in the future.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, which then factor into the environmental baseline, along with the effects of other activities that are interrelated or interdependent with that action. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur. In contrast to direct effects, indirect effects can often be more subtle, and may affect species and habitat quality over an extended period, long after project activities have been completed. Indirect effects are of particular concern for long-lived species such as the desert tortoise because project-related effects may not become evident in individuals or populations until years later.

Methodology

Permanent and Temporary Impacts

Because full recovery of desert vegetation can take several decades, we consider all ground-disturbing impacts associated with the proposed Project to be effectively permanent. Vasek *et al.* (1975) found that in the Mojave Desert transmission line construction and O&M activities resulted in a permanently devegetated maintenance road, enhanced vegetation along the road edge and between tower sites, and reduced vegetation cover under the towers, which recovered significantly but not completely in approximately 33 years. Based on a quantitative review of studies evaluating post-disturbance plant recovery and success in the Mojave and Sonoran deserts, Abella (2010) found that reestablishment of perennial shrub cover generally occurs within 100 years, but in fewer than 40 years in some situations. He also found that vegetation recovery times are likely impacted by a number of variables, including but not limited to climate (e.g. temperatures and rainfall), amount of cover of nonnative plants, and level of ongoing disturbance. Based on these factors, we consider temporary impacts to be equivalent to permanent impacts for the purposes of our effects analysis relative to the 30-year life of the Project.

Small Tortoises and Eggs

We do not provide an estimate for the number of small tortoises (<180 mm MCL) that would be injured or killed as a result of Project construction and O&M. The Service occasionally uses the work of Turner *et al.* (1987) to estimate the number of desert tortoises on a project site that are smaller than 180 mm MCL. These estimates involve several assumptions and the estimates can change depending on project size, location, and timing of construction. However, we anticipate that any loss of small tortoises will not result in population-level effects in the recovery unit or range-wide since the number of small tortoises that occur on the Project site is likely low given the low number of adults that likely occupy the Project area.

We also do not provide an estimate for the number of eggs that would be moved or destroyed as a result of Project construction and O&M. We assume it is possible a small number of eggs may be affected by the Project even though no burrows were detected during pre-project surveys.

However, we anticipate that the loss of eggs would not be significant at a population level because areas where eggs would be moved or destroyed and the population of reproductive adults within these areas that would produce eggs likely comprises a very small proportion of the reproductive capacity of desert tortoises in the action area and in the Colorado Desert Recovery Unit.

Direct Effects

Direct effects associated with the construction and O&M of the Project may result in death or injury to desert tortoises. Direct effects associated with the Project include death or injury resulting from (1) project equipment and construction activities, (2) increased traffic and road access, (3) translocation of tortoises from the Project area, and (4) loss of habitat that provides resource needs such as foraging and sheltering that support reproduction, population numbers, and distribution.

Construction and Operations and Maintenance

Death and injury of desert tortoises would result from collisions with or crushing by vehicles or heavy equipment, including individuals that take shelter under parked vehicles and are killed or injured when vehicles are moved. Desert tortoises would also be injured or killed during vegetation removal and clearing, trenching activities, and entrapment in open trenches and pipes. Individual tortoises or their eggs would be crushed or buried in burrows by machinery during construction and O&M-related activities. Because of increased human presence in the area, desert tortoises may be killed or injured due to collection or vandalism associated with increased encounters with workers, visitors, and unauthorized pets. Desert tortoises may also be attracted to the construction area by application of water to control dust, placing them at higher risk of death or injury due to the causes described above.

To minimize incidental death and injury of desert tortoises residing in or entering the construction or O&M disturbance areas (e.g., solar facility, gen-tie line, and access roads), the applicant would implement the general and species-specific actions specified in the Conservation Measures (CM) section as part of the proposed action. This section outlines specific measures and their component parts that are summarized below with representative examples of how the applicant would minimize adverse effects to the desert tortoise. The take of tortoises would be minimized by employing an Authorized Biologist(s) and Desert Tortoise Monitor(s), as necessary (CM’s 2, 3, and 4). These biologists would be present during all ground-disturbing construction activities and present on the linear or other unfenced sections that have not been cleared of tortoises. All Authorized Biologists will have authority to halt all activities in any area where there would be an unauthorized adverse impact. All Authorized Biologists must meet the minimum qualifications as outlined in CM 2 above. To further reduce the risk to any tortoises that inadvertently venture onto the gen-tie line access road during O&M activities, an Authorized Biologist or Desert Tortoise Monitor under their supervision will monitor O&M activities along the gen-tie line, access road, or any other Project elements that are unfenced and perform surveys 30 days prior to planned activities to map all signs of desert tortoise (CM 8). Additionally, workers will be trained on how to avoid impacts to the tortoise (CM 9). Parked vehicles will be inspected prior to being moved and if a tortoise is found beneath a vehicle it will be given up to 30 minutes to move of its own accord. If it does not, the Authorized Biologist will move the animal from harm's way following the handling guidelines outlined in the Service's Desert Tortoise Field Manual (Service 2009). The posting and enforcement of speed limits (CM 16) will also reduce adverse impacts to desert tortoise associated with O&M activities.

To keep tortoises from entering the solar facility during construction phases and O&M, the Applicant will fence the facility with permanent tortoise exclusion fencing in accordance with the Desert Tortoise Field Manual (Service 2009) or most up-to-date Service protocol, and incorporate shade structures along the fence per CM 6. After clearance surveys, any desert tortoises located would be either moved out of harm's way or translocated to the approved Recipient Site as outlined in the Service-approved Desert Tortoise Translocation Plan (CM 5). The Authorized Biologist or Desert Tortoise Monitor under their supervision will monitor daily Project activities that involve the use of heavy equipment or vehicles during construction, O&M along the gen-tie line, or any other Project elements that are unfenced (CM 8).

Any desert tortoises undetected during the initial clearance surveys may be located during construction activities by routine site inspections by the Authorized Biologist or incidental observations by construction workers who will receive Worker Environmental Awareness Program training. This training would be administered to all onsite personnel for the life of the Project (CM 9). This training would enhance the effectiveness of onsite personnel to improve detection and avoidance of desert tortoises and ensure proper translocation procedures are adhered to during construction and O&M activities. Additional measures to avoid and minimize incidental death and injury of desert tortoises include ensuring open trenches, pits, or excavated areas outside the fenced areas are sloped at a 3:1 ratio at the ends or provided with escape ramps to provide wildlife exit points, or covered completely to prevent wildlife access and entrapment (CM 17), limiting disturbance areas (CM 18), and minimizing the amount of water used for dust abatement to avoid ponding, which acts as an attractant to desert tortoises and their predators (CM 23).

Overall, we expect that death and injury of most large tortoises would be avoided during construction and O&M activities through compliance with the conservation measures. Although we estimate up to four large tortoises may occur within the Project area, we anticipate if necessary all tortoises encountered may be moved out of harm's way or translocated (CM 5 and CM 7) by an Authorized Biologist (CM 2). We also anticipate that small tortoises may be taken but based on the difficulty of detecting these small individual tortoises (Service 2015), we are unable to provide a number. The loss of these individuals is not likely to appreciably diminish the numbers of desert tortoises overall because relatively few desert tortoises will be affected by the activities considered in this biological opinion.

Desert Tortoise Translocation

In addition to construction and O&M-related activities, accidental death and injury could result from capturing, handling, and moving tortoises for the purpose of translocation. Accidental death and injury could result from (1) disease transmission associated with handling tortoises; (2)

stress associated with moving individuals outside of their established home range; (3) stress associated with artificially increasing the density of tortoises in an area and thereby increasing competition for resources; and (4) disease transmission between translocated and resident tortoises. Capture and handling of translocated and resident tortoises for the purposes of assessing health and monitoring could also result in accidental death or injury from handling to conduct visual health assessments, draw blood for ELISA testing (enzyme-linked immunosorbent assay), and attaching transmitters.

Incidental take of desert tortoises associated with the proposed action can be minimized through translocation, which recent studies have shown to be an effective conservation tool (Field *et al.* 2007, Esque *et al.* 2010, Drake *et al.* 2012, Nussear *et al.* 2012, Farnsworth *et al.* 2015, Hinderle *et al.* 2015, Brand *et al.* 2016, Nafus *et al.* 2017). However, capturing, handling, and moving tortoises for the purposes of translocating them out of the Project boundary or moving them out of harm's way may result in accidental death or injury if these methods are performed improperly, such as during extreme temperatures, or if individuals void their bladders and are not rehydrated. If multiple desert tortoises are handled by biologists without the use of appropriate protective measures and procedures, such as not re-using latex gloves, pathogens may be spread among individuals. To address these potential translocation adverse effects, the Project Translocation Plan will be drafted in accordance with the most recent Service guidance (Service 2017c). The Translocation Plan would be adaptively managed over time to facilitate a successful translocation effort. Because the Project Applicant would adhere to the most recent Service guidance in addition to implementing the conservation measures outlined above, we anticipate any mortality or injury to desert tortoises from activities associated with removing individuals from the Project boundary is unlikely.

We anticipate most, if not all, large desert tortoises would be captured and translocated to the Recipient Site or moved from harm's way to outside of the Project boundary. Tortoises found on the perimeter tortoise exclusion fence line may be moved more than 984 ft, or moved outside of the Project boundary following coordination with the BLM, Service, and CDFW to eliminate the need for translocation to the Recipient Site outside of the animal's current home range. Based on the survey results for the proposed Project site, we estimate that up to four large desert tortoises may be translocated to the Recipient Site.

Following the Service's draft translocation guidance (Service 2017c), health assessments would be conducted on all tortoises to be translocated prior to being released. For tortoises that would be moved less than 984 ft, visual health assessments (without blood draw for ELISA testing) would be conducted. These tortoises may also be transmitted and monitored until construction activities within the immediate area are complete. For tortoises that would be moved greater than 984 ft to the Recipient Site, visual health assessments and blood draw for ELISA testing would be conducted.

While we cannot reasonably predict if an increase in disease prevalence within the Recipient Site's resident population may occur due to translocation of up to four individuals, our analysis considers the following mitigating circumstances that are likely to reduce the magnitude of this risk:

a. The Applicant would use experienced biologists and approved handling techniques that are unlikely to result in substantially elevated stress levels in translocated animals.

b. Density-dependent stresses are unlikely to occur for reasons stated below.

c. Any animal that has clinical signs of disease or ELISA-positive blood test would not be translocated. The Service will be informed of the ELISA-positive test results and decide on an appropriate course of action.

d. Long-term monitoring, if required, of translocated individuals would be implemented to determine the prevalence of disease transmission.

Because ELISA testing can result in false-positive results (i.e., an animal may test positive even though it is not a carrier of the disease), the potential exists for removal of healthy individuals from the translocated population due to concern over disease. These individuals would not be released into the wild and would no longer contribute to the environmental baseline for the action area. Because the applicant would coordinate with the Service and perform follow-up testing of ELISA-positive individuals, the potential for removing false-positive individuals from the translocated population is low. Consequently, we conclude that few, if any, desert tortoises would be incorrectly removed from the population due to false positive results. Similarly, some of the animals that test positive may have survived past disease infections and are healthy. Although our understanding of disease ecology is not complete and removal of these individuals from the wild population could eliminate individuals with superior fitness and genetic adaptations for surviving disease from the gene pool, the low numbers of tortoises involved likely would not be large enough to affect population genetics in the wild.

Apart from disease, translocation may also affect resident desert tortoises within the Recipient Site due to local increases in population densities. Desert tortoises from the Desert Quartzite Project site would be moved into areas now supporting resident and translocated tortoises, which may result in increased competition for forage, especially during drought years. Increased tortoise densities may lead to increased inter-specific encounters and thereby increase the potential for spread of disease, potentially reducing the health of the overall population. Increased tortoise densities also may lead to increased competition for shelter sites and other limited resources or increased incidence of aggressive interactions between individuals (Saethre *et al.* 2003). Therefore, recipient sites must be sufficiently large to accommodate and maintain the resident and translocated desert tortoises (Service 2017c). Based on our estimate of the resident population in the Recipient Site as discussed in the Environmental Baseline section above, we estimate the population at the Recipient Site is below the recommended density threshold, so we do not anticipate that translocation of up to four large tortoises to the Recipient

Site would impact the densities. The density of tortoise on the Recipient Site is currently five tortoises per square mi (NER 2017), which is below the recommended density of 10 tortoises per square mi listed in our draft translocation guidance (Service 2017c). However, if the density of resident tortoises at the Recipient Site is determined to be higher, then the size of the Recipient Site may need to be expanded to ensure tortoise density following translocation does not exceed the maximum allowable density. The best available information regarding density estimates and thresholds and methods for determining disease prevalence indicate that all four of the desert tortoises expected to be translocated from the Project area can be accommodated at the Recipient Site.

Following the Service's translocation guidance (Service 2017c; see Figure 1 on page 3), if a large tortoise is translocated, an equal number of translocated, resident, and control tortoises should be monitored for at least 5 years. Because we have determined a control site will not provide additional information on the benefits of translocation, we anticipate up to 8 tortoises (4 each from the Project site and Recipient Site) will carry transmitters and be regularly monitored and handled annually for health assessments and blood draw for ELISA testing (spring and fall). Some potential exists that handling of desert tortoises for the purposes of conducting health assessments and monitoring may cause elevated levels of stress that may render these animals more susceptible to disease or dehydration from loss of fluids, but because health assessments and monitoring will be conducted by a Service-approved biologist, we do not expect these activities to result in direct injury or death.

For tortoises that are moved out of harm's way, we do not anticipate that moving tortoises less than 984 ft from the point of capture would result in death or injury because these individuals would be moved a relatively short distance and they would remain near or within their home range. Because these tortoises typically remain within their home range, we do not anticipate additional significant social or competitive impacts to resident tortoises within the 984-ft area.

During the initial weeks after translocation and over the period prior to establishment of a new home range, translocated desert tortoises may experience higher potential for mortality because they are moving through unfamiliar habitats and are less likely to have established cover sites that provide protection. Studies have documented various sources of mortality for translocated individuals, including predation, exposure, fire, disease, and flooding (Berry 1986, Nussear 2004, Field *et al.* 2007, U.S. Army 2010). Of these, predation appeared to be the primary mortality mechanism in most translocation studies (Field *et al.* 2007; Nussear 2004; U.S. Army 2010). These studies indicate that desert tortoise mortality is most likely to occur during the first year after release. After the first year, translocated individuals are more likely to establish new home ranges and mortality is likely to decrease.

Various studies have documented mortality rates of translocated desert tortoises ranging from 0 to 21.4 percent (Nussear 2004, Field *et al.* 2007). Recent studies in support of the Fort Irwin expansion (U.S. Army 2010) compared mortality rates associated with resident and translocated desert tortoise populations with that of control populations; preliminary results indicated translocation did not increase mortality above natural levels (Esque *et al.* 2010). Based on the available data and consistent with the findings in Esque *et al.* (2010), we conclude that mortality rates in the resident and translocated populations are unlikely to be elevated above levels that these populations would experience in the absence of translocation. Therefore, we anticipate that death or injury of few, if any, large tortoises will be the direct result of translocation.

Based on the pre-Project survey data (Ironwood 2014), we anticipate that few, if any, desert tortoises are likely to be moved during construction of the linear gen-tie line. Because disturbance areas for this Project component are relatively small, moving desert tortoises immediately outside of the work area is not likely to displace them from their current home ranges. Consequently, any desert tortoises moved from the gen-tie corridor will continue to occupy familiar territory and use known shelter sites and are unlikely to suffer mortality associated with temporary removal from the disturbance areas. Furthermore, subsequent to completion of the gen-tie construction, desert tortoises will be able to return to these areas. Therefore, we do not anticipate that moving desert tortoises out of harm's way of construction of linear features would result in death or injury because these individuals would remain near or within their existing home range, which is not likely to result in significant social or competitive impacts to resident desert tortoises in the area.

Habitat Loss

Up to 2,831 ac of desert tortoise habitat would be directly impacted by construction of the Project. The permanent loss of habitat would adversely impact resident tortoises by eliminating available habitat. Within the action area, desert tortoise appear to be restricted to the upper alluvial fans near the base of the Mule Mountains, where at least one resident tortoise was found adjacent to the Project boundary. When considering an area occupied by resident desert tortoises, we expect that home range size will vary with respect to location and year (Berry 1986), and this expansion and contraction may indicate changes in resource availability, reproductive opportunities, and social interaction (O'Connor *et al.* 1994). Over their lifetimes, individual desert tortoises may use, on average, more than 1.5 square miles of habitat (Service 1994) and may make periodic movements of more than 4.3 miles at a time (Berry 1986). Therefore, we expect that if available, the lower quality habitat on the Project site would have been utilized again under more favorable weather conditions that produce forage or suitable cover.

To offset permanent loss of this tortoise habitat, a total of 2,831 ac of equivalent or better quality habitat would be acquired to benefit the desert tortoise by connecting occupied habitat adjacent to critical habitat, and/or other core habitats in the Colorado Desert Recovery Unit (CM 14). These future conservation lands will be conserved and managed in perpetuity for tortoises.

We expect less than 0.04 percent of the suitable habitat within the Colorado Desert Recovery Unit (which is approximately 7,635,000 acres) would be lost by constructing this Project. Because of the location, we do not expect this loss of habitat to regionally impact population connectivity. We evaluated the habitat loss in regard to regional connectivity by looking at various models identifying priority linkages or connectivity corridors for desert tortoise (see Penrod *et al.* 2012). The Service's Desert Tortoise Recovery Office modeled landscape-scale connectivity and identified priority habitat linkages between and among tortoise conservation areas in the Sonoran and Mojave deserts (Averill-Murray *et al.* 2013). Although the landscape scale of these modeling efforts can overlook site-specific conditions at a more local scale, these modeling results did not indicate a regional-scale linkage across the Palo Verde Mesa in the action area.

Indirect Effects

Human activities may provide food in the form of trash and litter or water that attracts tortoise predators such as the common raven. Ravens capitalize on human encroachment and expand into areas where they were previously absent or in low abundance. Ravens habituate to human activities and are subsidized by the food and water, as well as roosting and nesting resources, that are introduced or augmented by human encroachment. The nearby Blythe airport and electrical transmission lines provide food, water features, and roosting/nesting substrates that otherwise would be unavailable. Facility infrastructure such as electrical transmission lines, fence lines, buildings, and other structures on the Project site would also provide perching, roosting, and nesting opportunities for ravens.

Common ravens are natural predators on small desert tortoises. Natural predation rates by ravens may be altered or increased when natural habitats are disturbed or modified. Common raven populations in some areas of the Mojave Desert have increased 1,500 percent from 1968 to 1988 in response to expanding human use of the desert (Boarman 2002). Since ravens were scarce in the Mojave Desert prior to 1940, the existing level of raven predation on small tortoises is considered an unnatural occurrence (BLM 1990). We expect that such increases in raven occurrences in the Mojave Desert are similarly indicative of the Sonoran Desert where human-related disturbances are increasing.

To minimize the generation of food subsidies that may attract common ravens during construction and O&M-related activities, all trash materials would be disposed of in self-closing containers and removed to prevent the attraction of tortoise predators to the Project site, and road-killed animals would be immediately removed and disposed (CM 21 and CM 22). The Applicant would minimize water subsidies by ensuring water does not pool or pond for more than 20 minutes (CM 23). Also, increases in raven abundance in the action area would be minimized by measures outlined in the Raven Management Plan (CM 10). To further minimize indirect and cumulative impacts of raven predation on tortoises associated with the proposed Project, the Applicant would contribute to the Service’s Regional Raven Management Program developed to address raven predation on tortoises at a population scale in the California desert region as a conservation action for desert tortoise.

Native shrubs and annual plants used by tortoises for sheltering and feeding adjacent to the Project area also may be adversely affected by introduced invasive nonnative plants (or weeds) that respond positively to ground disturbing activities. Project equipment may transport or spread invasive nonnative plants in the action area where they may become established. Additionally, the potential introduction of invasive plants may lead to increased wildfire risk (Brooks *et al.* 2003). However, potential degradation of habitat due to spread of invasive nonnative plants would be avoided and minimized by measures outlined in the Integrated Weed

Management Plan designed to prevent the introduction of any new weeds and the spread of existing weeds as a result of Project construction and O&M (CM 11).

Effect on Recovery

Per section 2(b) of the Act, the primary purposes of the Act are to provide a means whereby the ecosystems upon which listed species depend may be conserved, and to provide a program for the recovery of listed species. Per section 2(c), Congress established a policy requiring all Federal agencies to use their authorities in seeking to recover listed species in furtherance of the purposes of the Act. Consistent with these purposes and Congressional policy, sections 3(5), 4(f), and 7(a)(1) of the Act, the implementing regulations to section 7(a)(2) at 50 CFR § 402.02and related preamble at 51 FR 19926 (June 3, 1986) generally mandate Federal agencies to further the survival and recovery of listed species in the use of their authorities. Our analysis below assesses whether the proposed action adequately offsets its adverse effects to the environmental baseline to the desert tortoise, and the extent to which the proposed action would cause significant impairment of recovery efforts or adversely affect the species chances for survival to the point that recovery is not attainable (51 FR 19926).

The Project Applicant would implement numerous measures to avoid, minimize, and offset the adverse effects to habitat and the relatively few tortoises in the Project area (see Conservation Measures section above). Overall, we expect that four or fewer large desert tortoises would be injured or killed during construction and O&M during the life of the solar facility, and that a relatively small but unquantifiable number of small tortoises and eggs may be moved or destroyed during construction and O&M. We expect that most large tortoises encountered during work activities would be either moved short distances out of harm's way or translocated. Because the BLM and Project Applicant would implement a variety of measures to reduce stress to these animals, we do not anticipate that injury or mortality would result from the handling and relocation of these animals.

Based on the results of studies discussed above, most of the large tortoises moved from the Project area likely would continue to survive and reproduce at the location where they are moved (i.e., in adjacent habitat or the Recipient Site). Consequently, we anticipate the Project would not appreciably diminish the reproductive capacity of the species, particularly in light of the relatively few tortoises that would be affected.

The distribution of the desert tortoise would be minimally reduced because the proposed Project would result in loss of a small percentage (0.04 percent) of the habitat in the Colorado Desert Recovery Unit, which does not constitute a substantial portion of the recovery unit. Given the location of the Project in an area near the edge of the tortoise's range, we do not anticipate the amount of habitat to be lost because of Project activities would reduce the distribution of the tortoise to an appreciable degree. We do not anticipate that loss of habitat in the Project area would substantially reduce the ability of the tortoise to survive and recover in the wild because the recovery plan (Service 2011) primarily focuses long-term conservation priorities in higher value habitat areas. The proposed acquisition of tortoise habitat would benefit tortoise habitat connectivity between known populations of tortoises, and/or or other preserve lands in the

Colorado Desert Recovery Unit. Therefore, we conclude that the proposed action is not likely to cause significant impairment of recovery efforts or adversely affect the desert tortoise's prospects for recovery.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, local, private, or certain tribal actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service has no information regarding any future State, local, private, or certain tribal actions that are reasonably certain to occur in the action area.

CONCLUSION

After reviewing the current status, environmental baseline for the action area, effects of the proposed action, and cumulative effects of the desert tortoise, it is the Service's biological opinion that the proposed action is not likely to jeopardize the continued existence of the desert tortoise or destroy or adversely modify designated critical habitat. We base this decision on the following:

1. The Applicant will implement numerous measures to ensure that most tortoises are moved out of the Project footprint and injury and death of tortoises is minimized (i.e., clearance surveys, exclusion fencing, relocation, translocation, and employing authorized tortoise biologists).

2. The Applicant will implement measures to reduce the potential for increased predation by common ravens, both in the vicinity of the Project footprint and regionally, and to reduce the spread of invasive nonnative plants in the Project area.

3. Given the small number of tortoises potentially affected by the Project, we have no information to indicate that construction and O&M of the Project would appreciably reduce the tortoise population levels in the Colorado Desert Recovery Unit.

4. Few, if any, tortoises are likely to be injured and killed as a result of relocation or translocation.

5. Although the proposed Project would reduce the amount of available tortoise habitat and thereby result in a loss of habitat connectivity, habitat would remain to the west of the proposed Project to provide connectivity of tortoises in the long term.

6. Relocation of some tortoises into habitat adjacent to the project area, and translocation of some tortoises to the Recipient Site will increase tortoise numbers in those areas. Successful translocation would minimize adverse effects by allowing

those tortoises to remain in the population and contribute towards recovery of the species.

7. Compensation requirements of acquisition and/or restoration/enhancement through the BLM and CDFW will result in an increase in the quantity and quality of habitat managed for tortoise conservation.

8. No designated critical habitat occurs within the Project boundary.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below for desert tortoise are non-discretionary and must be undertaken by the BLM as binding conditions of any grant or permit issued to the Applicant/Permittee, as appropriate, for the exemption in section 7(o)(2) to apply. The BLM has a continuing duty to regulate the activity covered by this incidental take statement. If the BLM (1) fails to assume and implement the terms and conditions or (2) fails to require the Applicant/Permittee to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the BLM must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR § 402.14(i)(3)].

AMOUNT AND EXTENT OF TAKE

We anticipate that the number of desert tortoises that may be incidentally taken would be low due to the small number of individuals estimated to occur within the Project area and the anticipated effectiveness of conservation measures described as part of the proposed action. However, quantifying the precise number of individuals that may be incidentally taken is not possible because this species is cryptically colored to avoid predation, and spends the majority of its life inhabiting burrows to avoid environmental extremes or predation, making the observation or detection of death or injury difficult. In addition, population numbers fluctuate in response to weather patterns and other biotic and abiotic factors, and population levels and the distribution of individual animals may have changed since the species surveys were completed and are anticipated to continue changing over the 30-year life of the Project. As a result, finding dead or injured individuals within the Project area is difficult as individuals may be crushed or buried underground in burrows that were not found or inspected, and otherwise hard to recognize or detect. The number of tortoise eggs and small individuals is even more difficult to quantify. Because eggs and small tortoises are almost never found during clearance surveys, we assume virtually all these early life forms will be killed or injured by construction and O&M activities if they occur within the Project footprint.

While we cannot provide the precise number of desert tortoises that may be taken, we have estimated the number of large tortoises (>180 mm MCL) in the Project area based on the best available information. Based on this estimate, we have established take thresholds that, if exceeded, will trigger reinitiation of consultation.

Take of desert tortoises is anticipated and exempted as follows:

1. The loss of up to 2,831 ac of habitat from construction and O&M-related activities may result in accidental death or injury of tortoise eggs and small and large tortoises from crushing, trampling, or burial. If the Project impacts more than this acreage of tortoise habitat, the take threshold will be exceeded.

2. As discussed in the "Environmental Baseline" section above, we estimate that up to four large tortoises may occupy the Project site. While we cannot quantify the precise numbers of tortoises that may be killed or injured as a result of construction or O&M activities for the reasons discussed above, we anticipate the number of large tortoises that may be killed or injured will be low because no tortoises were found in the Project survey area during surveys, which likely indicates a small population. Therefore, using our best professional judgment in light of best available information, we anticipate that construction of the Project will result in the incidental take of four large desert tortoises.

3. Because we do not want to limit the ability of the Service-approved Authorized Biologist to avoid and minimize the direct injury or death of tortoises by relocating and translocating tortoises found during preconstruction clearance surveys or O&M activities, all take in the form of trapping, capture, or collection for the purposes of relocation from harm's way or translocation to a recipient site is exempted for any eggs and small and large tortoises found during clearance surveys, monitoring activities, O&M activities, or other incidental observations, subject to the reasonable and prudent measures and terms and conditions below. Because the capture or collection, relocation and translocation, and release of desert tortoises will be conducted by a Service-approved biologist, we do not expect these activities to result in direct injury or death of any relocated or translocated tortoises. Therefore, if any

tortoises are directly injured or killed during relocation or translocation, the take threshold will be exceeded.

4. Take, in the form of capture or collection, of up to eight large tortoises (up to four each from the Project footprint and Recipient Site) may result from attaching transmitters to tortoises and monitoring their activities. Although transmittered tortoises may be captured multiple times over the course of the post-translocation monitoring effort, we do not anticipate injury or mortality of these individuals due to post-translocation monitoring. However, if any tortoises are directly injured or killed during monitoring activities, the take threshold will be exceeded.

5. Take, in the form of capture or collection, of up to eight large tortoises (up to four each from the Project footprint and Recipient Site) may result from blood draw for ELISA testing to assess disease prevalence. Although such an invasive procedure presents some likelihood that individuals could be injured or killed, we do not anticipate that blood draw will result in the death or injury of any individuals because blood draw will be conducted by Service-approved biologists, following Service-approved methods. If any tortoises are directly injured or killed as a result of blood draw, the take threshold will be exceeded. This provision is included to ensure that the Service and BLM have the flexibility to collect samples if deemed necessary.

IMPACT OF THE INCIDENTAL TAKING OF THE SPECIES

In the accompanying biological opinion, the Service determined that these levels of anticipated take are not likely to result in jeopardy or adversely affect the recovery of the desert tortoise.

REASONABLE AND PRUDENT MEASURES

The BLM and Applicant are implementing conservation measures for this project as part of the proposed action to minimize the taking of desert tortoises. The Service’s evaluation in the biological opinion includes consideration of the conservation measures developed by the BLM and Applicant to reduce the adverse effects of the proposed project on this species. Any subsequent changes in the conservation measures proposed by BLM or Applicant or in the conditions under which these activities will occur may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR § 402.16. These reasonable and prudent measures are intended to supplement the conservation measures that were proposed by BLM and Applicant as part of the proposed action, and are necessary and appropriate to minimize the impact of the taking on desert tortoises.

a. The BLM and Applicant shall monitor and report the level of incidental take of desert tortoises to the Service throughout the life of the project and report on the effectiveness of the project minimization measures to reduce the impact of incidental take of tortoises.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act, BLM and Applicant, and their agents and contractors, must comply with the following terms and conditions, which implement the reasonable and prudent measure described above and are intended to minimize the impact of the incidental taking. These terms and conditions are non-discretionary (see section 7(o)(2)).

The following term and condition implements the reasonable and prudent measure above.

The Applicant shall prepare and provide to the Service and BLM an annual report by January 31 of each year of the Project. The annual report shall document but not be limited to the following:

1. Compliance with project specifications and conservation measures outlined in this biological opinion as they relate to desert tortoises.

2. Any activities determined by the Authorized Biologist or Desert Tortoise Monitors to be out of compliance with project-specifications and conservation measures outlined in this biological opinion and the corrective measures implemented to bring the Project back into compliance.

3. The total amount and location of desert tortoise habitat disturbed by construction and O&M activities during the reporting year.

4. The number and location of desert tortoises killed or injured during project construction or O&M activities during the reporting year and a description of the circumstances leading to the death or injury of individuals of the species.

5. Activities conducted during the reporting year. These activities include but are not limited to: (1) the number and location of desert tortoises located during project activities and relocated or translocated during preconstruction; (2) construction, and O&M activities during the reporting year; (3) a detailed description of the relocation and translocation activities; and (4) a detailed description of monitoring activities conducted at the Recipient Site during the reporting year.

    a. If more than four adult desert tortoises, or any eggs or small tortoises, are found within the Project footprint, the Authorized Biologist shall immediately report the observation to the Service, prior to any subsequent relocation or translocation activities. The Service will review the information to determine its consistency with the effects analysis above and whether relocation or translocation of additional desert tortoises would benefit their survival, or whether reinitiation of consultation is warranted.

6. Activities conducted under the Raven Management Plan (CM 10) during the reporting year, including but not limited to the results of raven nest monitoring and removal of raven nests and offending ravens.

7. Activities conducted under the Weed Management Plan (CM 11), including but not limited to invasive plant species control activities conducted during construction or O&M activities in the Project area during the reporting year and the status of control activities conducted the previous year.

Disposition of Sick, Injured, or Dead Specimens

Pursuant to 50 CFR § 402.14(i)(1)(v), the BLM must notify the Service immediately at 760-322-2070 (Palm Spring Fish and Wildlife Office) if any desert tortoises are found sick, injured, or dead in the action area. Immediate notification means verbal (if possible) and written notice within 1 workday, and must include the date, time, location, and photograph of the carcass, and any other pertinent information. Care must be taken in handling sick or injured individuals to ensure effective treatment, and care and in handling dead specimens to preserve biological material in the best possible state.

The BLM must also notify the Service immediately at 760-320-2070 if any endangered or threatened species not addressed in this biological opinion is found dead or injured in the Project footprint during the life of the project. The same reporting requirements also shall pertain to any healthy individual(s) of any threatened or endangered species found in the action area and handled to remove the animal to a more secure location. Refer to the “Terms and Conditions” section above for details on reporting procedures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that the BLM work with the Applicant and the Service to determine if the transmittered desert tortoises associated with the translocated populations can be used to answer additional research questions related to translocation or desert tortoise biology.

REINITIATION NOTICE

This concludes formal consultation on the proposed Project for the desert tortoise. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this document, please contact Felicia Sirchia of the Palm Springs Fish and Wildlife Office at (760-322-2070, extension 405; or felicia_sirchia@fws.gov).

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APPENDIX B:

MITIGATION MEASURES, MONITORING, AND REPORTING PROGRAM

B.1 INTRODUCTION

The following sections summarize measures that are incorporated as part of the Desert Quartzite Solar Project record of decision. The measures include a combination of the following:

1. APMs, as specified in the Applicant's POD, management plans, and technical reports;
2. Regulatory requirements of other Federal, state, and local agencies;
3. USFWS terms and conditions identified in the BO; and
4. Additional BLM-proposed mitigation measures, ROW grant terms and conditions, and best management practices (BMPs).

These requirements generically are referred to as "mitigation measures" throughout the PA/EIS/EIR. Because these mitigation measures are derived from a variety of sources, they also are required, and their implementation regulated, by the various agencies. The Applicant would prepare an Environmental Inspection and Compliance Monitoring Program and Plan (EICMPP)/Mitigation Monitoring, Reporting, and Compliance Program (MMRCP) ensuring the effective implementation of the mitigation measures identified to address Project impacts. All management and control plans that are to be developed under any APM or mitigation measure must be developed and approved by the applicable agency(ies) prior to issuance of a County grading permit. The timing, responsible agency, and methods for verification of each measure are provided in Table B-2.

There are seven compensatory mitigation measure that were analyzed part of the Desert Quartzite Solar Plan Amendment/Environmental Impact Statement/Environmental Impact Report (PA/EIS/EIR). All of the measures are required under the California Environmental Quality Act (CEQA) as part of the California's significance determinations. In addition, WIL-4 and WIL-5 are required under the California Endangered Species Act and through the United States Endangered Species Act consulation process. The California Department of Fish and Wildlife has a requirement to mitigate impacts to Riparian Habitat and State Waters.

The California Desert Conservation Area plan has a requirement to mitigate impacts to the Mojave Fringe toed Lizard (BLM Sensitive Species; WIL-10) and the Mojave desert tortoise (listed under the Endangered Species Act;WiL-4&5). All of the measure(s) comply with WOIM 2019-018 and none requires the transfer of funds to the Bureau of Land Management.

B.2 Air Resources

The following Project-specific mitigation measures were developed to reduce and/or avoid potential air quality impacts associated with the Project and alternatives.

AQ-1: Dust Control Plan. The Applicant shall develop and implement their Dust Control Plan that describes the fugitive dust control measures that would be implemented and monitored at all locations of proposed facility construction. The plan shall be submitted to MDAQMD no less than 60 days prior to the start of construction. The plan shall be developed in conjunction with soil scientists engaged by the BLM, shall be designated as a Dust Control and Soil Stabilization Plan, and shall incorporate methods for soil stabilization. This plan shall comply with the mitigation measures described in the Fugitive Dust Control Rules enforced by Mojave Desert Air Quality Management District (MDAQMD) (Rule 403.2), as well as the existing State Implementation Plan (SIP) available for PM_{10} and $PM_{2.5}$, and the BLM Fugitive Dust/PM_{10} Emissions Control Strategy for the Mojave Desert Planning Area. The plan shall be incorporated into all contracts and contract specifications for construction work. The plan shall outline the steps to be taken to minimize fugitive dust generated by construction activities by:

- Describing each active operation that may result in the generation of fugitive dust;
- Identifying all sources of fugitive dust, e.g., earth moving, storage piles, vehicular traffic;
- Describing the control measures to be applied to each of the sources identified. The descriptions shall be sufficiently detailed to demonstrate that the best available control measures required by the MDAQMD for linear projects are used; and
- Providing the following control measures, in addition to or as listed in the applicable rules but not limited to:
    - Frequent watering or stabilization of excavation, spoils, access roads, storage piles, and other sources of fugitive dust (parking areas, staging areas, other) if construction activity causes persistent visible emissions of fugitive dust beyond the work area;
    - Use of street sweeping and trackout devices at the construction site. Sweep streets daily (with water sweepers) if visible soil material is carried into adjacent public streets;
    - Apply BLM-approved soil stabilizers or apply water to form and maintain a crust on inactive construction areas (disturbed lands that are unused for four consecutive days);
    - Suspend ground disturbing activities when winds exceed 25 miles per hour and stabilize stockpiles (e.g., by watering or covering);
    - Pre-watering of soils prior to clearing and trenching;
    - Cover stockpiled soils with sturdy durable tarps when soils are not in immediate use;
    - Pre-moisten, as necessary to control dust or cover prior to transport, import and export dirt, sand, or loose materials;
    - Installing temporary coverings or applying soil stabilizers on storage piles when not in use. Cover loads in haul trucks or maintain at least six inches of free-board when traveling on public roads;
    - Dedicating water truck or high/capacity hose to any soil screening operations;
    - Minimizing drop height of material through screening equipment;
    - Reducing the amount of disturbed area where possible;
    - Planting vegetative ground cover as soon as possible following construction activities, in areas where such reclamation is planned, or stabilize as necessary until reclamation is initiated; and

- Stabilizing disturbed soil surfaces left undeveloped for solar energy capture (e.g., temporary disturbance sites and other exposed soils onsite prone to saltation and aerosolization after construction concludes).

The Applicant or its designated representative shall obtain prior approval from the MDAQMD prior to any deviations from fugitive dust control measures specified in the Dust Control Plan.

The provisions of the Dust Control Plan shall also apply to Project decommissioning activities.

The Dust Control Plan shall be prepared and submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

AQ-2: Protect the Stability of Desert Pavement Areas. The Applicant shall in general avoid disturbing desert pavement surfaces during construction. Where the BLM agrees that disturbance of the pavement is unavoidable, the Applicant shall ensure that all areas where desert pavement has been temporarily disturbed during construction of the Project shall be applied with a BLM-approved soil stabilizer where appropriate for stabilization based on soil characteristics prior to Project operation. The Applicant shall develop, for review and approval by the BLM, a plan that outlines the frequency of non-toxic soil stabilizer applications based on the specifications of the selected soil stabilizer. The Plan shall be developed in coordination with scientists engaged by the BLM to find the most efficient methods for stabilizing soil surfaces using diverse methods in addition to chemical stabilizers: e.g., development of soil biotic crusts, revegetation, construction of small netted fences, and other methods. The Plan shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

AQ-3: Construction Emissions Reduction. The Applicant shall implement the following measures to reduce emissions during construction:

- Off-road diesel-powered construction equipment fleets used on the project shall be composed in compliance with California Air Resources Board (CARB) In-Use Off-Road Vehicle Regulation rules. In addition, all retrofitted construction equipment shall be outfitted with Best Available Control Technology devices certified by the CARB;
- Non road vehicles and equipment would meet or exceed the US EPA Tier 4 exhaust emissions standards for heavy-duty non road compression-ignition engines to the maximum extent feasible (e.g., construction equipment, nonroad trucks, etc.).
- As feasible, reduce emissions of particulate matter and other pollutants by using alternative clean fuel technology such as electric, hydrogen fuel cells, and propane-powered equipment or compressed natural gas-powered equipment with oxidation catalysts instead of gasoline- or diesel-powered engines;
- Ensure that all construction equipment is properly tuned and maintained and shut off when not in direct use, i.e., “idling” no more than five minutes;
- Prohibit engine tampering to increase horsepower;
- Minimize use, trips, and unnecessary idling of heavy equipment;
- Reduce construction-related trips of workers and equipment, including trucks; and

- Require in model year 2010 and following years that on-road vehicles should meet, or exceed, the US EPA exhaust emissions standards for heavy-duty on-highway compression-ignition engines.

The Applicant shall prepare and maintain documentation that demonstrates implementation of the proposed emission reduction measures and required mitigation measures. The following documents and/or files shall be submitted to the agencies involved in the environmental review and permitting process for the proposed facility:

- Inventory of all equipment used during each construction activity. At a minimum, this inventory shall include an equipment description, equipment identification, identification of type of engine(s), and engine emission data; and
- The CARB Diesel Off-Road On-line Reporting System (DOORS) for registration shall be used to certify conformance with CARB In-Use Off-Road Vehicle Regulation rules.

B.3 Biological Resources – Vegetation

The following measures shall be implemented to reduce or avoid impacts to vegetation alliances and special-status plant species from construction, operation and maintenance, and decommissioning of the Project. Of these measures, only measures VEG-9 and VEG-10 are specific to vegetation resources. The other measures (VEG-1 through VEG-8, VEG-11, and VEG-12) are general biological mitigation measures applicable to both vegetation and wildlife.

VEG-1: Qualifications of Designated Biologist(s). Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall assign at least one Designated Biologist(s) to the Project. The Applicant shall submit the resume of the proposed Designated Biologist(s), with at least three references and contact information, to the BLM AO for confirmation that applicant meets the minimum qualifications.

The Designated Biologist(s) must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. Have at least one year of field experience with biological resources found in or near the Project area;
4. Meet the current USFWS Authorized Biologist qualifications criteria (http://www.fws.gov/carlsbad/PalmSprings/DesertTortoise/DT_Auth_Bio_qualifications_statement_10-20-08.pdf), demonstrate familiarity with protocols and guidelines for the Mojave desert tortoise, and be approved by the USFWS;
5. Possess a CESA Memorandum of Understanding pursuant to §2081(a) for Mojave desert tortoise.

The resume shall demonstrate to the satisfaction of the BLM AO, in consultation with CDFW and USFWS, that the proposed Designated Biologist(s) and alternate has the appropriate training and background to effectively implement the mitigation measures.

VEG-2: Duties of the Designated Biologist(s). The Applicant shall ensure that the Designated Biologist(s) performs the activities described below during any site mobilization activities and construction-related ground disturbance such as grading, boring or trenching activities. The Designated Biologist(s) may be assisted by the approved Biological Monitor(s) but remains the contact for the Applicant and the BLM AO. The Designated Biologist(s) or approved Biological Monitor(s) Duties shall include the following:

1. Advise the Applicant’s construction and operation managers on the implementation of the biological resources mitigation measures;
2. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;
3. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
4. Periodically inspect active construction areas where animals may have become trapped. Monitor the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm’s way;
5. Notify the Applicant of any non-compliance with any biological resources mitigation measure;
6. Respond as established in the EICMPP to inquiries of the BLM AO regarding biological resource issues;
7. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Compliance Report;
8. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on Mojave desert tortoise surveys and handling procedures; and
9. Maintain the ability to be in regular communication with representatives of CDFW, USFWS, and the BLM AO, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Data Base and BLM.

VEG-3: Identification of Biological Monitors. Prior to the start of ground disturbance and issuance of a County grading permit, the Designated Biologist(s) shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to the BLM AO. The resume shall demonstrate, to the satisfaction of the BLM AO, the appropriate education and experience to accomplish the assigned biological resource tasks. The Biological Monitor is the equivalent of the USFWS-approved biologist (also “Service-approved biologist”).

Biological Monitor(s) training by the Designated Biologist(s) shall include familiarity with the mitigation measures, BRMIMP, WEAP, and USFWS guidelines on Mojave desert tortoise surveys and handling procedures.

VEG-4: Duties of Biological Monitors. The Biological Monitors shall assist the Designated Biologist(s) in conducting surveys and in monitoring of site mobilization activities and construction-related ground disturbance grading, boring or trenching. The Monitors shall report issues of concern to the Designated Biologist(s), who shall remain the contact for the Applicant.

VEG-5: Authority of the Designated Biologist(s) and Biological Monitors. The Applicant's construction/operation manager shall act on the advice of the Designated Biologist(s) and Biological Monitor(s) to ensure conformance with the biological resources mitigation measures. The Designated Biologist(s) shall have the authority to immediately stop any activity and/or order any reasonable measure to avoid take of an individual of a listed species. The Designated Biologist(s) shall:

1. Require a halt to activities in any area when determined that there would be a potential take of an individual of a listed species if the activities continued; and
2. Inform the Applicant and the construction/operation manager when to resume activities.

If the Designated Biologist(s) is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist(s).

VEG-6: Worker Environmental Awareness Program. Prior to the Notice to Proceed, the Applicant shall develop and implement a Project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from the AO. The WEAP shall be administered to all on-site personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, and subcontractors. The WEAP shall be implemented during site preconstruction, construction, operation, and decommissioning. The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist(s) and consist of presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no special-status plants or wildlife shall be harmed, disturbed, or harassed;
3. Place special emphasis on Mojave desert tortoise, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
4. Include training related to cultural resources, as outlined in Mitigation Measure CULTURAL-8.
5. Include a discussion of fire prevention measures to be implemented by workers during Project activities; require workers dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;

6. Describe the temporary and permanent habitat protection measures to be implemented at the Project site;
7. Review project guidelines regarding non-compliance issues and the consequences for non-compliance, including legal protections for resources and penalties for violation of Federal and state laws;
8. Describe reporting requirements for protected resources, including requirements for notifying the designated biologist;
9. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
10. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The training shall be bilingual, and must be completed by all personnel prior to starting work on the project. The specific program can be administered by a competent individual(s). The WEAP shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

VEG-7: Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall develop a BRMIMP, and shall submit copies of the proposed BRMIMP to the BLM AO and the County for review and approval. The Applicant shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Integrated Weed Management Plan (APM BIO-5), the Vegetation Resources Management Plan (APM BIO-4), the Desert Tortoise Translocation Plan (Mitigation Measure WIL-2), the Predator Management Plan (Mitigation Measure WIL-5), the Bird and Bat Conservation Strategy (Mitigation Measure WIL-6), the Burrowing Owl Protection and Mitigation Measures Plan (Mitigation Measure WIL-9), and all other biological mitigation and/or monitoring plans associated with the Project.

The BRMIMP shall include accurate and up-to-date maps depicting the location of sensitive biological resources that require temporary or permanent protection during construction, operation, and decommissioning. The BRMIMP shall include complete and detailed descriptions of the following:

1. Biological resources mitigation, including habitat restoration and soil stabilization, monitoring, and compliance measures proposed by the Applicant;
2. Biological resources mitigation measures identified by BLM and the County as necessary to avoid or mitigate impacts;
3. Biological resource mitigation, monitoring and compliance measures required in Federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;
4. Sensitive biological resources to be impacted, avoided, or mitigated by Project construction, operation, and closure (see Tables 3.3-1, 3.3-3, and 3.4-1);
5. Required mitigation measures for each sensitive biological resource;

6. Measures that shall be taken to mitigate temporary disturbances from construction activities;
7. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
8. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
9. Performance standards and remedial measures to be implemented if performance standards are not met;
10. Biological resources-related facility closure measures including a description of funding mechanism(s);
11. A process for proposing plan modifications to the BLM AO and appropriate agencies for review and approval; and
12. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the Project site, or during Project surveys, to the BLM and to the CNDDB per CDFW requirements.

VEG-8: Avoidance of Biological Resources During Construction. The Applicant shall undertake the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. Limit Area of Disturbance. The boundaries of all areas to be disturbed (including Project facilities, gen-tie structure locations, staging areas, access roads, sites for temporary placement of spoils) shall be delineated with stakes and flagging, and temporary construction fencing, prior to construction activities in consultation with the Designated Biologist(s).
2. Stockpiles. In areas where soil removal is required, soils removed up to 6" in depth, shall be removed and windrowed separately from spoils, to a depth not to exceed 24". Spoils and topsoil shall be stockpiled separately in disturbed areas (or areas to be disturbed, either lacking or with minimal native vegetation). Windrowed topsoil shall be planted with container stock or seeded, with BLM approved genetically and ecologically appropriate native plant materials suitable for the site, within 30 days of initial disturbance in order to maintain biological soil viability. If stockpiles are to be maintained longer than 30 days, the Applicant shall establish native plants in the windrowed topsoil.
3. Parking and Staging. When possible, parking areas, staging and disposal site locations shall similarly be located in areas without native vegetation or special-status species habitat. All disturbances, Project vehicles and equipment shall be confined to the flagged and fenced areas.
4. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.

5. Minimize Traffic Impacts. Vehicular traffic during Project construction and operation shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited.
6. Monitor During Construction. In areas that have not been fenced with Mojave desert tortoise exclusion fencing and cleared, a Designated Biologist or Biological Monitor shall be present at the construction site during all Project activities that have potential to disturb soil, vegetation, and wildlife. The Designated Biologist or Biological Monitor shall walk immediately ahead of equipment during brushing and grading activities.
7. Minimize Impacts of Transmission/Pipeline Alignments, Roads, Staging Areas. Staging areas for construction on the plant site shall be within the area that has been fenced with Mojave desert tortoise exclusion fencing and cleared. For construction activities outside of the plant site (transmission line, pipeline alignments) access roads, pulling sites, and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant alliances and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee’s (APLIC’s) Suggested Practices for Avian Protection on Power Lines (APLIC 2006) and Mitigating Bird Collisions with Power Lines (APLIC 1994) to reduce the likelihood of large bird electrocutions and collisions.
8. Avoid Use of Toxic Substances. Soil bonding (dust suppression) and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants.
9. Minimize Lighting Impacts. Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat.
10. Monitor Active Nests: The monitoring shall be conducted in accordance with Nesting Bird Monitoring and Management Plan approved by the BLM AO. The Plan shall include management measures to prevent disturbance to all nesting birds from construction related activities. Triggers for management shall be evidence of Project-related disturbance to nesting birds such as: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Bird Monitoring and Management Plan shall include a description of management actions, which shall include, but not be limited to, limiting construction activities in an appropriate sized no-disturbance buffer that are deemed by the biologist to be the source of disturbance to the nesting bird.
11. Avoid Vehicle Impacts to Mojave desert tortoise. Parking and storage shall occur within the area enclosed by Mojave desert tortoise exclusion fencing to the extent feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of Mojave desert tortoise. If a Mojave desert tortoise is observed, it would be left to move on its own. If it does not move within 15 minutes, a Designated Biologist or Biological Monitor under the Designated Biologist’s direct supervision may remove and relocate the animal to a safe location if temperatures are within the range described in the USFWS 2009 Desert Tortoise Field Manual.
12. Avoid Wildlife Pitfalls:

a. Backfill Trenches. At the end of each work day, ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) outside the area fenced with Mojave desert tortoise exclusion fencing have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with Mojave desert tortoise -exclusion fencing. All trenches, bores, and other excavations outside the areas fenced with Mojave desert tortoise exclusion fencing shall be inspected periodically throughout the day, at the end of each workday and at the beginning of each workday by the Designated Biologist or a Biological Monitor. Should a tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the individual as described in the Desert Tortoise Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.

b. Avoid Entrapment of Mojave desert tortoise. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground and within Mojave desert tortoise habitat (i.e., outside the fenced area) for one or more nights, shall be inspected for tortoises before the material is moved, buried or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not need to be inspected or capped if they are stored within the fenced area after the clearance surveys have been completed.

13. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards and to prevent the formation of puddles, which could attract Mojave desert tortoises and common ravens to construction sites. The Biological Monitor shall patrol these areas to ensure that water does not puddle and shall take appropriate action (e.g., coordinating with the contractor to reduce watering frequency) to reduce water application where necessary. The Biological Monitor shall take appropriate action (e.g., coordinating with the contractor to reduce watering frequency) to reduce water application where standing water occurs.

14. Dispose of Road-killed Animals. Road-killed animals or other carcasses detected on roads within the Project area or access road shall be immediately reported to the Designated Biologist and picked up immediately. The contractor and Designated Biologist shall be responsible for securing any appropriate Federal or state permits to handle and dispose of collected animals, including handling and disposal for scientific use. For special-status species roadkill, the Biological Monitor shall contact CDFW and USFWS within 1 working day of receipt of the carcass for guidance on disposal or storage of the carcass. The Biological Monitor shall maintain and report protected species records as described in Mitigation Measure WIL-3 (Project Notification and Reporting).

15. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The site environmental compliance lead shall be informed of any hazardous spills immediately as directed in the Project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction

equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

16. Worker Guidelines. During construction all trash and food-related waste shall be placed in wildlife-proof containers and removed weekly from the site. Workers shall not feed wildlife or bring pets to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons. Vehicular traffic shall be confined to existing routes of travel to and from the Project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit when traveling on dirt access routes within areas not cleared by protocol level surveys where Mojave desert tortoise may be impacted shall not exceed 15 miles per hour.

17. Implement Erosion Control Measures. Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter "Waters of the State". Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the Project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential.

18. Monitor Ground Disturbing Activities Prior to Pre-Construction Site Mobilization. If pre-construction site mobilization requires ground-disturbing activities such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.

19. Reclamation of Temporarily Disturbed Areas. Disturbed sites shall be restored using methods approved by BLM vegetation restoration ecologists. Restoration design shall incorporate a replicated experimental design to test methods for improved and accelerated restoration of native vegetation, desert habitat, and ecosystem processes disturbed in the course of Project construction. Only BLM approved genetically and ecologically appropriate native plant materials suitable for the site shall be used for restoration.

    Desert soil and vegetation ecologists designated by the BLM shall collaborate with the Applicant to prepare and implement a Restoration section of the Vegetation Resources Management Plan that restores all areas subject to temporary disturbance to pre-Project grade and conditions. This plan shall be submitted to the BLM for approval, and must be approved by the BLM prior to initiation of disturbance. In review of the plan, BLM will consider the ability of the proposed activities to support BLM's Long Term Monitoring Strategy for the Riverside East SEZ (BLM 2016), and BLM ecologists shall design experimental treatments that refine or introduce restoration treatments so that knowledge about the practice of accelerating soil stabilization and vegetation restoration increases and methods become more efficient. Temporarily disturbed areas within the Project area include, but are not limited to: all proposed locations for linear facilities, temporary access roads, berms, areas surrounding the drainage diffusers, construction work temporary lay-down areas not converted to part of the solar field, and construction equipment staging areas. The Applicant shall be responsible for preparing an accurate map of temporarily disturbed areas so that the soil and restoration ecologists will be able to begin restoring temporary disturbance areas once the operational phase of the solar facility begins.

The Restoration section of the Vegetation Resources Management Plan shall include a description of any required topsoil salvage, plant salvage, seeding techniques, inoculation of microbial organisms for plant mycorrhizae and for biotic soil crust formation, methods to stabilize and shape soil surface to reduce soil erosivity, and techniques to increase soil fertility and water holding capacity.

Restoration, including seeding of temporarily disturbed areas shall be implemented within 30 days following completion of construction. If seeding is used for reclamation, the seed shall contain no prohibited or restricted noxious weed seeds and shall be certified weed free. Seed may contain no more than 2.0 percent of "other crop" seed by weight, unless inclusion of sterile cereal grain seeds are specifically approved by the BLM as decoy seeding. Seed tags shall be submitted to the BLM at least 14 days before the date of proposed seeding for acceptance. Seed that does not meet the above criteria shall not be applied to public lands. Only native plant species which would naturally occur within the disturbed habitats shall be used for reclamation. Seed/container stock sources for reclamation shall be from within appropriate provisional or empirical seed transfer zones. In areas where vegetation has been removed, restoration shall include salvage and transplanting of milkweed.

Baseline conditions, including up-to-date invasive weed data on seven target species (Sahara mustard, Bermuda grass, Eucalyptus, Russian thistle, Mediterranean grass, tamarisk, and puncture vine) shall be established using pre-construction surveys. Pre-construction surveys shall include total vegetative cover, non-native vegetative cover, and representative photos of sites with weed occurrences.

A monitoring and reporting protocol shall be a requisite part of the Plan, and the following performance standards shall be met by the end of monitoring year 2:

a. at least 80 percent of the relative plant cover observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; and

b. relative cover and density of plant species within the temporarily disturbed areas shall be equal to or greater than 60 percent of baseline conditions.

If these standards are not met, remedial reclamation measures shall be prepared and submitted to the BLM for approval prior to implementation.

VEG-9: Special-Status Plant Species Impact Avoidance and Minimization, and Compensation. Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall prepare and implement a VRMP that meets the approval of BLM AO and Riverside County. The Plan shall ensure adequate special-status plant surveys and reporting, avoidance of and mitigation for impacts to special-status plants, and funding or support of a compensatory mitigation program for state or Federally listed species through land acquisition, restoration/enhancement, or a combination of acquisition and restoration/ enhancement.

The Applicant shall implement measures VEG-1 through VEG-8 to avoid, minimize, and compensate for impacts to special status plant species, and shall implement APM BIO-4, including its requirements for salvage of plants meeting the criteria described in the VRMP prior to disturbance, using BLM-approved protocols. In this discussion the term "Project Disturbance Area" encompasses all areas to be temporarily and permanently disturbed by the Project, including the plant site, linear facilities, and areas disturbed by temporary access roads, fence installation, construction work lay-down and staging areas, parking, storage, or by any other activities resulting in disturbance to soil or vegetation.

An experienced botanist knowledgeable in the complex biology of the local flora and consistent with CDFW (2009) and BLM guidelines for surveyor qualifications shall be identified as the Designated Botanist. The name(s) and qualifications of the Designated Botanist(s) shall be submitted to BLM for review and approval.

The Designated Botanist shall oversee compliance with all special status plant avoidance, minimization, and compensation measures described in this condition throughout construction and closure. The Designated Botanist shall oversee and train all other Biological Monitors tasked with conducting botanical survey and monitoring work. All personnel conducting special status plant inventories must have strong backgrounds in plant taxonomy and plant ecology and field sampling design and methods, knowledge of the floras of the inventory area including the special status plant species, and familiarity with natural communities of the area. During operation of the Project, the Designated Botanist shall be responsible for providing protection from project activities to special status plant occurrences within 100 feet of the project boundaries.

A) Special-Status Plant Impact Avoidance and Minimization Measures

Here are the Best Management Practices and other measures designed to avoid accidental impacts to plants occurring outside of the Project Disturbance Area and within 100 feet of the Project Disturbance Area during construction, operation, and decommissioning. The Applicant shall incorporate all measures for protecting special-status plants in close proximity to the site into the BRMIMP (Mitigation Measure VEG-7). These measures shall include the following elements:

a) Site Design Modifications: Incorporate site design modifications to minimize impacts to special-status plants along the Project linears: limiting the width of the work area; adjusting the location of staging areas, lay downs, spur roads and poles or towers; driving and crushing vegetation as an alternative to blading temporary roads to preserve the seed bank, and minor adjustments to the alignment of the roads and pipelines within the constraints of the ROW. These modifications shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP.

b) Delineate Environmentally Sensitive Areas (ESAs). Prior to the start of any ground- or vegetation-disturbing activities, a qualified Project biologist shall establish ESAs to protect avoided special-status plants that occur outside of, but within 100 feet of, the Project Disturbance Areas. The locations of ESAs shall be clearly depicted on construction drawings, which shall also include all avoidance and minimization measures on the margins of the construction plans. The boundaries of the ESAs shall be placed a minimum of 20 feet from the occurrence. Where this is not possible due to construction constraints, other protection measures, such as silt-fencing and sediment controls, may be employed to protect the occurrences. Equipment and vehicle maintenance areas, and wash areas, shall be located 100 feet from the upgradient side of any ESAs. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls under penalty of work stoppages and additional compensatory mitigation. ESAs shall also be clearly identified (with signage or by mapping on site plans) to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure.

c) Special-Status Plant Worker Environmental Awareness Program (WEAP). The WEAP (Mitigation Measure VEG-6) shall include training components specific to protection of special-status plants that may occur in the Project Area.

d) Herbicide and Soil Stabilizer Drift Control Measures. Special-status plant occurrences within 100 feet of the Project Disturbance Area shall be protected from herbicide and soil stabilizer drift. The IWMP (APM BIO-5) shall include measures to minimize potential for chemical drift or residual toxicity to special-status plants consistent with guidelines outlined in a Pesticide Use Proposal (PUP), such as those provided by the Nature Conservancy’s The Global Invasive Species Team (Hillmer and Liedtke 2003), the USEPA, and the Pesticide Action Network Database.

e) Erosion and Sediment Control Measures. Erosion and sediment control measures shall not inadvertently impact special-status plants (e.g., by using invasive or non-native plants in seed mixes, introducing pest plants through contaminated seed or straw, etc.). These measures shall be incorporated in any required Drainage, Erosion, and Sedimentation Control Plans.

f) Monitoring and Reporting Requirements. The Designated Botanist shall conduct weekly monitoring of the ESAs that protect special-status plant occurrences during construction and decommissioning activities.

B) Avoidance Requirements for Special-Status Plants

The Applicant shall avoid impacts to special-status plant populations whenever possible, as described below.

1. Mitigation for special-status plants as defined in Section 3.3.1.3 – Avoidance on Linear Corridors Required: If special-status species as defined in Section 3.3.1.3 are detected within the Project Disturbance Area, the Applicant shall prepare and implement a Vegetation Resources Management Plan (VRMP) that describes measures to avoid and minimize impacts to plant populations on the Project linear corridors and construction laydown areas, unless such avoidance would create greater environmental impacts in other resource areas (e.g. Cultural Resource Sites) or other restrictions (e.g., FAA or other restrictions for placement of transmission poles). The Applicant shall provide compensatory mitigation as described below in Mitigation Measure VEG-9.C for impacts to special-status plants that cannot be avoided. The content of the VRMP and definitions shall be as described as follows:

a. A description of the occurrences of the special-status species on the Project site, ecological characteristics such as micro-habitat requirements, ecosystem processes required for maintenance of the habitat, reproduction and dispersal mechanisms, pollinators, local distribution, and a description of the extent of the population off-site occurrences. Occurrences shall be considered impacted if they are within the Project footprint, and if they would be affected by Project-related hydrologic changes or changes to the local sand transport system.

b. A description of the avoidance and minimization measures that would achieve complete avoidance of occurrences on the Project linear corridors and construction laydown areas, unless such avoidance is infeasible.

c. A description of the measures that would be implemented to avoid or minimize impacts resulting from Project development. Avoidance is generally considered not feasible if the species is located within the Project Disturbance Area (bounded by the tortoise exclusion fence and the drainage channels).

d. If avoidance on the linear corridors, construction laydown areas, and solar facility combined protect less than 75 percent of the local population of the affected species, the Applicant shall implement off-site mitigation that demonstrates that the impacts will not cause a loss of viability for that species. Implementation of the compensatory off-site mitigation must meet the performance standards described in Mitigation Measure VEG-9.C, below, and may include land acquisition or implementation of a restoration/enhancement program for the species. Compensatory offsite mitigation shall occur outside of a DFA.

e. "Avoidance" shall include protection of the ecosystem processes essential for maintenance of the protected plant occurrence. For all but one of the late blooming plant species with potential to occur, the plant species are annuals that depend on a viable seed bank to maintain population health and persistence. The primary goal of avoidance for these annual species will be protection of the soil integrity and the seed bank that is closely associated with undisturbed soils. Any impacts to the soil structure or surface features will be considered an impact.

2. Preservation of the Germplasm of Affected Special-Status Plants. For all direct impacts to special-status plants, regardless of whether compensatory mitigation is required, mitigation shall include seed collection from the affected special-status plants on-site prior to construction to conserve the germplasm and provide a seed source for restoration efforts. The seed shall be collected under the supervision or guidance of a reputable seed storage facility such as the Rancho Santa Ana Botanical Garden Seed Conservation Program, San Diego Natural History Museum, or the Missouri Botanical Garden. The costs associated with the long-term storage of the seed shall be the responsibility of the Applicant. Any efforts to propagate and reintroduce special-status plants from seeds in the wild shall be carried out under the direct supervision of specialists such as those listed above and as part of a VRMP, which would include components for habitat restoration and site reclamation, approved by the BLM AO.

C) Off-Site Compensatory Mitigation for Protected Plants

This section describes performance standards for mitigation for a range of options for compensatory mitigation.

Where compensatory mitigation is required under the terms of Mitigation Measure VEG-9.B, above, the Applicant shall mitigate Project impacts with compensatory mitigation. Compensatory mitigation shall consist of acquisition of habitat supporting the species, or restoration/enhancement of populations of the species, and shall meet the performance standards for mitigation described below. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.

The Applicant shall provide funding for the acquisition and/or restoration/ enhancement, initial improvement, and long-term maintenance and management of the acquired or restored lands. The actual costs to comply with this condition will vary depending on the Project Disturbance Area, the actual costs of acquiring compensation habitat, the actual costs of initially improving the habitat, the actual costs of long-term management as determined by a Property Analysis Record (PAR) report, and other transactional costs related to the use of compensatory mitigation.

The Applicant shall comply with other related requirements of this measure, as follows:

I. Compensatory Mitigation by Acquisition: The requirements for the acquisition initial protection and habitat improvement, and long-term maintenance and management of compensation lands for state and Federally protected plant species include all of the following:

   1. Selection Criteria for Acquisition Lands. The compensation lands selected for acquisition may include any of the following three categories:

      a. Occupied Habitat, No Habitat Threats: The compensation lands selected for acquisition shall be occupied by the species and shall be characterized by site integrity and habitat quality that are required to support the species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the species on the proposed acquisition lands should be viable, stable or increasing (in size and reproduction).

      b. Occupied Habitat, Habitat Threats. Occupied compensation lands characterized by habitat threats may also be acquired as long as the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan as described in Mitigation Measure VEG-9.C.II, below.

      c. Unoccupied but Adjacent. The Applicant may also acquire habitat for which occupancy by the species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The Applicant shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts will benefit adjacent habitat that is occupied by the species.

2. Review and Approval of Compensation Lands Prior to Acquisition. The Applicant shall submit a formal acquisition proposal to the BLM AO describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above, and must be approved by the BLM AO.
3. Compensation Land Management Plan. The Applicant or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the plant occurrences. The Management Plan shall be submitted for review and approval to the BLM AO.
4. Integrating Plant Mitigation with Other Mitigation lands. If all or any portion of the acquired Mojave desert tortoise, Waters of the State, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for plant mitigation.
5. Compensation Lands Acquisition Requirements. The Applicant shall comply with the following requirements relating to acquisition of the compensation lands after the BLM AO, has approved the proposed compensation lands:
    a. Preliminary Report. The Applicant, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the BLM AO. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the BLM AO. For conveyances to the state, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.
    b. Title/Conveyance. The Applicant shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the BLM AO. Any transfer of a conservation easement or fee title may be to CDFW or an organization qualified to hold title to and manage compensation lands (pursuant to California Government Code §65965), to BLM, or another public agency approved by the BLM AO. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFW or another entity approved by the BLM AO. If an entity other than CDFW holds a conservation easement over the compensation lands, the BLM AO may require that CDFW or another entity approved by the BLM AO, in consultation with CDFW, be named a third party beneficiary of the conservation easement. The Applicant shall obtain approval of the BLM AO of the terms of any transfer of fee title or conservation easement to the compensation lands.

c. Initial Protection and Habitat Improvement. The Applicant shall fund activities that the BLM AO requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. The costs of these activities are estimated to be $330 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy. A qualified organization, CDFW or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code §65965), if it meets the approval of the BLM AO in consultation with CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

d. Property Analysis Record. Upon identification of the compensation lands, the Applicant shall conduct a PAR or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the BLM AO before it can be used to establish funding levels or management activities for the compensation lands.

e. Long-term Maintenance and Management Funding. In accordance with Mitigation Measure VEG-11 (Phasing), the Applicant shall deposit in the National Fish and Wildlife Foundation's (NFWF) Renewable Energy Action Team (REAT) Account a non-wasting capital long-term maintenance and management fee in the amount determined through the PAR or PAR-like analysis conducted for the compensation lands.

f. The BLM AO, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

g. Interest, Principal, and Pooling of Funds. The Applicant shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met:

   i. Interest. Interest generated from the initial capital long-term maintenance and management fund shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action that is approved by the BLM AO and is designed to protect or improve the habitat values of the compensation lands.

ii. Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the BLM AO or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.

iii. Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the BLM AO.

h. Other Expenses. In addition to the costs listed above, the Applicant shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFW or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

i. Mitigation Security. The Applicant shall provide financial assurances in accordance with Mitigation Measure VEG-10.2 to the BLM AO to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing Project activities. Financial assurances shall be provided to the BLM AO in the form of an irrevocable letter of credit, a pledged savings account or another form of approved security (“Security”). The amount of the Security shall be $2,280 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the BLM AO, the Applicant shall obtain the BLM AO’s approval of the form of the Security. The BLM AO may draw on the Security if the BLM AO determines the Applicant has failed to comply with the requirements specified in this condition. The BLM AO may use money from the Security solely for implementation of the requirements of this condition. The BLM AO’s use of the Security to implement measures in this condition may not fully satisfy the Applicant’s obligations under this condition, and the Applicant remains responsible for satisfying the obligations under this condition if the Security is insufficient. The unused Security shall be returned to the Applicant in whole or in part upon successful completion of the associated requirements in this condition.

j. The Applicant may elect to comply with the requirements in this condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the REAT Account established with the NFWF. To use this option, the Applicant must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this condition) of implementing the requirement. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the Applicant, the Applicant shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, and the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially transferred by the Applicant, the remaining balance shall be returned to the Applicant.

The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the BLM. Such delegation shall be subject to approval by the BLM AO, in consultation with CDFW, BLM, and USFWS, prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the BLM's certification of the Project.

II. Compensatory Mitigation by Habitat Enhancement/Restoration: As an alternative or adjunct to land acquisition for compensatory mitigation the Applicant may undertake habitat enhancement or restoration for the plant species. Examples of suitable enhancement projects include but are not limited to the following: i) control unauthorized vehicle use into an occurrence (or pedestrian use if clearly damaging to the species); ii) control of invasive non-native plants that infest or pose an immediate threat to an occurrence; iii) exclude grazing by wild burros or livestock from an occurrence; or iv) restore lost or degraded hydrologic or geomorphic functions critical to the species by restoring previously diverted flows, removing obstructions to the wind sand transport corridor above an occurrence, or increasing groundwater availability for dependent species.

If the Applicant elects to undertake a habitat enhancement project for mitigation, the project must meet the following performance standards: The proposed enhancement project shall achieve rescue of an off-site occurrence that is currently assessed, based on the NatureServe threat ranking system (Master et al. 2009; see also Morse et al. 2004) with one of the following threat ranks: a) long-term decline >30 percent; b) an immediate threat that affects >30 percent of the population, or c) has an overall threat impact that is High to Very High. "Rescue" would be considered successful if it achieves an improvement in the occurrence trend to "stable" or "increasing" status, or downgrading of the overall threat rank to slight or low (from "High" to "Very High").

If the Applicant elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the BLM AO for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall be $2,280 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy for every acre of habitat supporting the plant species which is directly or indirectly impacted by the Project. The amount of the security may be adjusted based on the actual costs of implementing the enhancement, restoration and monitoring. The implementation and monitoring of the enhancement/restoration may be undertaken by an appropriate third party such as NFWF, subject to approval by the BLM AO. The Habitat Enhancement/Restoration Plan shall include each of the following:

1. Goals and Objectives. Define the goals of the restoration or enhancement project and a measurable course of action developed to achieve those goals. The objective of the proposed habitat enhancement plan shall include restoration of a plant occurrence that is currently threatened with a long-term decline. The proposed enhancement plan shall achieve an improvement in the occurrence trend to “stable” or “increasing” status, or downgrading of the overall threat rank to slight or low (from “High” to “Very High”).
2. Historical Conditions. Provide a description of the pre-impact or historical conditions (before the site was degraded by weeds or grazing or ORV, etc.), and the desired conditions.
3. Site Characteristics. Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species.
4. Ecological Factors. Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc.
5. Methods. Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the enhancement must be completed within five years.
6. Budget. Provide a detailed budget and time-line, and develop clear, measurable, objective-driven annual success criteria.
7. Monitoring. Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall include a minimum of five years of quarterly monitoring, and then annual monitoring for the remainder of the enhancement project, and until the performance standards for rescue of a threatened occurrence are met. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the enhancement project success criteria, detailed description of remedial actions taken or proposed and contact information for the responsible parties. In review of the plan, BLM will consider the ability of the proposed activities to support BLM’s Long Term Monitoring Strategy for the Riverside East SEZ (BLM 2016).
8. Reporting Program. The Plan shall ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties.
9. Contingency Plan. Describe the contingency plan for failure to meet annual goals.
10. Long-term Protection. Include proof of long-term protection for the restoration site. For private lands this would include conservations easements or other deed restrictions; projects on public lands must be contained in a Desert Wildlife Management Area, Wildlife Habitat Management Area, or other land use protections that will protect the mitigation site and species.

VEG-10: Mitigation for Impacts to Sensitive Riparian Habitat and State Waters. The

Applicant shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to waters of the state and to satisfy requirements of California Fish and Game Code §§1600 and 1607.

1. Acquire Off-Site State Waters: If the Project results in direct impacts to state jurisdictional waters, the Applicant shall acquire, in fee or in easement, a parcel of land, the mitigation ratio of which is to be determined by CDFW based on review of the Streambed Alteration Agreement application. The terms and conditions of this acquisition or easement shall be as described in Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements. Mitigation for impacts to state waters shall occur within the Palo Verde and surrounding watersheds, as close to the Project site as possible. If security is posted in accordance with Provision 2 below (Security for Implementation of Mitigation), the Applicant shall acquire, in fee or in easement, the land, no more than 18 months after the start of Project ground-disturbing activities.
2. Security for Implementation of Mitigation: The Applicant shall provide financial assurances to the BLM AO and CDFW to guarantee that an adequate level of funding is available to implement the acquisitions and enhancement of state waters as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO and CDFW in the form of an irrevocable letter of credit, a pledged savings account or Security prior to initiating ground-disturbing Project activities. Prior to submittal to the BLM AO, the Security shall be approved by the BLM AO, in consultation with CDFW and the USFWS, to ensure funding. See Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements, for a discussion of the assumptions used in calculating the Security. The Security amounts may change based on land costs or the estimated costs of enhancement and endowment. The final amount due shall be determined by the PAR analysis conducted pursuant to Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements, and approved by the BLM AO and CDFW. The final mitigation acreage is also subject to CDFW concurrence with Project impacts to waters of the state that were developed by the Applicant.
3. Preparation of Compensation Land Management Plan: The Applicant shall submit to the BLM AO and CDFW a draft Management Plan that reflects site-specific enhancement measures for the drainages on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control.
4. Code of Regulations: The Applicant shall provide a copy of the BRMMP and CDFW permits to all contractors, subcontractors, and the Applicant’s Project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFW personnel upon demand. The BLM AO reserves the right to issue a stop work order or allow CDFW to issue a stop work order after giving notice to the Applicant. If the BLM AO in consultation with CDFW, determines that the Applicant has breached any of the terms or conditions or for other reasons, including but not limited to the following:
    a. The information provided by the Applicant regarding streambed alteration is incomplete or inaccurate;

  b. New information becomes available that was not known to it in preparing the terms and conditions; or
  c. The Project or Project activities as described in the Staff Assessment have changed.

5. Best Management Practices: The Applicant shall also comply with the following conditions to protect drainages near the Project Disturbance Area:
  a. The Applicant shall minimize road building, construction activities and vegetation clearing within ephemeral drainages to the extent feasible.
  b. The Applicant shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows.
  c. The Applicant shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the Applicant to ensure compliance.
  d. Spoil sites shall not be located at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.
  e. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. These materials, placed within or where they may enter a drainage by the Applicant or any party working under contract or with the permission of the Applicant, shall be removed immediately.
  f. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state.
  g. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any drainage.
  h. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.

VEG-11: Project Phasing. The Applicant may provide mitigation as required in multiple phases for distinct construction elements. These phases will generally include installation of fencing, clearing, grubbing and grading, and development of common facilities first, followed by the remaining power block units. All construction activities for the non-linear features during these subsequent phases shall occur within Mojave desert tortoise exclusionary fenced areas that have been cleared in accordance with USFWS protocols.

Prior to initiating each phase of construction the Applicant shall submit the actual construction schedule, a figure depicting the locations of proposed construction and amount of acres to be disturbed. Mitigation acres are calculated based on the compensation requirements for each resource type including Mojave desert tortoise (Mitigation Measure WIL-4), western burrowing owl (Mitigation Measure WIL-9), Mojave fringe-toed lizard (Mitigation Measure WIL-10), and state waters (Mitigation Measure VEG-10). Compensatory mitigation for each phase shall be implemented according to the timing required by each condition.

VEG-12: Monitoring and Research. The Applicant shall provide the BLM and/or its designees access to land within the fenced area of the Desert Quartzite solar energy facility at any time for the purposes of research and monitoring, which may also include the installation of compatible facilities within the project boundaries.

B.4 Biological Resources – Wildlife

The following measures shall be implemented to reduce or avoid wildlife species impacts from construction, operation and maintenance, and decommissioning of the Project. Mitigation measures VEG-1 through VEG-8, and VEG-11 are general biological mitigation measures which are applicable to both vegetation and wildlife.

Prior to construction, the following plans required by this section and those required in Section 4.3, *Biological Resources* - *Vegetation*, shall be prepared and submitted to the appropriate agencies for review and approval:

1. Desert Tortoise Translocation Plan
2. Predator Management Plan
3. Bird and Bat Conservation Strategy
4. Burrowing Owl Mitigation Plan
5. Biological Resources Mitigation, Implementation, and Monitoring Plan
6. PAR for Mojave Fringe-toed Lizard compensation

These plans or programs are explained below in more detail.

WIL-1: Measures to Avoid Take of Mojave Desert Tortoise. The Applicant shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to Mojave desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling, and other procedures shall be consistent with those described in the USFWS (2009) *Desert Tortoise Field Manual* or more current guidance provided by CDFW and USFWS. The Applicant shall also implement all terms and conditions described in the Biological Opinion prepared by USFWS. The Applicant shall implement the following measures, unless superseded by requirements of the BO.

Preconstruction Survey. Prior to the initiation of construction activities, the Applicant shall conduct a pre-construction survey to determine the number of tortoises that would be affected by Project implementation, in accordance with USFWS (2011b) protocol, and consult with USFWS to confirm the survey results.

Exclusionary Fencing. The Applicant shall erect temporary and/or permanent tortoise exclusionary fencing around active portions of the Project site following the pre-construction tortoise survey. Temporary fencing would be used for areas where temporary construction activities occur, and would be removed following completion of activities in those areas. Permanent fencing would enclose the Project area during construction, operations, and decommissioning. The exclusionary fencing, whether temporary or permanent in nature, shall be installed according to USFWS (2009) protocol, which requires fencing to be buried 12 inches below the ground surface and extending to 22-24 inches above the ground surface. If a phased approach is implemented during the construction phase, the exclusionary fencing may be installed in phases, with pre-construction surveys conducted prior to and clearance surveys conducted immediately after installation of the exclusionary fence. The Applicant shall also ensure that tortoise exclusionary fencing is maintained during the decommissioning phase to keep tortoises from accessing active work areas. Throughout the construction and decommissioning phases, the tortoise exclusionary fence shall be checked regularly per item 4 below, and repaired (if necessary) to ensure its integrity. If a tortoise is encountered along the inside or outside of the fence, an Authorized Biologist shall capture it in accordance with USFWS (2009: Chapter 7) and DTC (1999) protocols, perform a health assessment in accordance with USFWS (2013) guidelines, attach a radio transmitter to the tortoise in accordance with USFWS (2009) and Boarman et al. (1998) protocols, and release the tortoise in a previously identified Project-adjacent relocation areas supporting tortoise habitat in accordance with USFWS (2011b) protocol. Temporary exclusionary fencing shall be removed following completion of the construction and decommissioning phases.

The Applicant shall ensure that the Project’s perimeter security fence includes exclusionary fencing that prevents Mojave desert tortoises and other burrowing animals from accessing the Project site. The exclusionary fencing shall be installed at the base of the security fence according to USFWS (2009) specifications, and cattle guards shall be installed at entrances to the Project, also according to USFWS (2009) protocol.

All fencing installation corridors shall be flagged to assist biologists in studying the fence route and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the Mojave desert tortoise exclusionary fence and utility rights- of-way alignments shall be conducted using techniques outlined in the USFWS’ 2009 *Desert Tortoise Field Manual*. Prior to the surveys the Applicant shall provide to the BLM Authorized Officer (BLM AO), CDFW, USFWS, and the County a figure clearly depicting the limits of construction disturbance for the proposed fence installation.

1. *Timing, Supervision of Fence Installation*. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the

Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.

2. *Fence Material and Installation.* All Mojave desert tortoise exclusionary fencing shall be constructed in accordance with the USFWS' Desert Tortoise Field Manual (2009, Chapter 8 – Desert Tortoise Exclusion Fence).
3. *Security Gates.* Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. Tortoise guards shall be installed at gate locations.
4. *Fence Inspections.* Following installation of the Mojave desert tortoise exclusion fencing, the fencing shall be regularly inspected during construction, operations, and decommissioning. If tortoise were moved out of harm's way during fence construction, fencing shall be inspected daily for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence. Thereafter, fencing shall be inspected quarterly and during and within 24 hours following major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of site fencing shall occur for the life of the Project. Temporary fencing shall be inspected weekly and, where drainages intersect the fencing, during and within 24 hours following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the area for tortoise.

Mojave Desert Tortoise Clearance Surveys within the Plant Site. Clearance surveys shall be conducted in accordance with the USFWS (2011b) protocol and USFWS-approved Desert Tortoise Translocation Plan. Clearance surveys of the site may only be conducted when tortoises are most active in the Project vicinity (March through May or September through mid-November). Clearance surveys of linear features may be conducted during anytime of the year. Surveys outside of the active season within the solar plant site require approval by USFWS and CDFW. Any tortoise located during clearance surveys of the power plant site and linear features shall be relocated and monitored in accordance with the Desert Tortoise Translocation Plan.

Burrow Searches. During clearance surveys all Mojave desert tortoise burrows, and burrows constructed by other species that might be used by Mojave desert tortoises, shall be examined by the Designated Biologist, who may be assisted by the Biological Monitors, to assess occupancy of each burrow by Mojave desert tortoises and handled in accordance with the *Desert Tortoise Field Manual*. To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined, but only on the last survey pass and if not occupied by other wildlife. Tortoises taken from burrows and from elsewhere on the power plant site shall be relocated or translocated as described in the Desert Tortoise Translocation Plan.

Burrow Excavation/Handling. All potential Mojave desert tortoise burrows located during clearance surveys would be excavated by hand, tortoises removed, and collapsed or blocked to prevent occupation by Mojave desert tortoises. All Mojave desert tortoise handling and removal, and burrow excavations, including nests, would be conducted by the Designated Biologist, who may be assisted by a Biological Monitor in accordance with the *Desert Tortoise Field Manual*.

Monitoring Following Clearing. Following the Mojave desert tortoise clearance and removal from the power plant site and utility corridors, workers and heavy equipment shall be allowed to enter the Project site to perform clearing, grubbing, leveling, and trenching. A Designated Biologist shall directly monitor site clearing and shall be onsite during grading activities to find and move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Desert Tortoise Translocation Plan.

Reporting. The Designated Biologist shall record the following information for any Mojave desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether Mojave desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled Mojave desert tortoise as described in the paragraph below. Mojave desert tortoise moved from within Project areas shall be marked and monitored in accordance with the Desert Tortoise Translocation Plan (Mitigation Measure WIL-2).

Avoidance – Construction. During the construction of linear features (fencing, transmission lines, and access roads), all live tortoises and active burrows shall be avoided to the extent possible. The Applicant shall ensure that an Authorized Biologist or Biological Monitor under their supervision monitors any Project activities in unfenced areas for presence of tortoises. If an active burrow cannot be avoided by construction activities, the burrow shall be excavated using protocols in USFWS Desert Tortoise Field Manual (USFWS 2009). If a tortoise wanders into an unfenced, active work area, does not leave the area on its own accord, and cannot be avoided by Project activities, the Applicant shall ensure that an Authorized Biologist captures the tortoise, implements a health assessment of the tortoise, relocates it to previously identified appropriate Project-adjacent habitat away from any active, unfenced work areas, and monitor the individual via telemetry, in accordance with USFWS (2011) protocol. The Authorized Biologist or Biological Monitor shall have a copy of all measures, including the BO, when monitoring Project activities. The Authorized Biologist or Biological Monitor shall have the authority to halt all non-emergency activities that are in violation of the measures. Work shall proceed only after hazards to Mojave desert tortoise are removed, the species is no longer at risk, or the individual has been moved from harm's way by an Authorized Biologist. A compliance report shall be submitted to the BLM and USFWS annually.

Avoidance – Operations and Maintenance*.* The Applicant shall ensure that an Authorized Biologist or Biological Monitor under their supervision monitors any Project activities in unfenced areas for presence of tortoises during the O&M phase. If a tortoise wanders into an unfenced, active work area, does not leave the area on its own accord, and cannot be avoided by Project activities, the Applicant shall ensure that an Authorized Biologist captures the tortoise, implements a health assessment of the tortoise, relocates it to previously identified appropriate Project-adjacent habitat away from any active, unfenced work areas, and monitor the individual via telemetry, in accordance with USFWS (2011) protocol. The Authorized Biologist or

Biological Monitor shall have a copy of all measures, including the BO, when monitoring Project activities. The Authorized Biologist or Biological Monitor shall have the authority to halt all non-emergency activities that are in violation of the measures. Work shall proceed only after hazards to Mojave desert tortoise are removed, the species is no longer at risk, or the individual has been moved from harm's way by an Authorized Biologist. A compliance report shall be submitted to the BLM and USFWS annually.

WIL-2: Mojave Desert Tortoise Translocation Plan. If the pre-construction survey determines that more than 5 tortoises are located on the Project site, the Applicant shall identify an off-site translocation site that is depleted of tortoises, where tortoises may be translocated in accordance with current USFWS protocol. The Applicant shall ensure that each proposed translocation site is surrounded by appropriate habitat with a 6.5 km radius in accordance with current USFWS protocol. The Applicant shall also identify areas of appropriate tortoise habitat directly adjacent to the Project site where tortoises may be relocated in accordance with current USFWS protocol.

Prior to ground disturbance, a Desert Tortoise Translocation Plan shall be prepared for the Project that provides details for conducting translocation of tortoises to off-site translocation areas or relocation of tortoises to near-site relocation areas. The purpose of the plan is to describe the process of translocation, minimize mortality of Mojave desert tortoises, and assess the effectiveness of the translocation effort through a long-term monitoring program. If more than 5 tortoises are discovered in the Project site during the clearance survey, the Applicant shall implement health assessments of the tortoises, translocate them to previously identified off-site translocation sites, and monitor them via telemetry, in accordance with current USFWS protocol. If one to five tortoises are discovered in the Project site during the clearance survey, the Project proponent shall implement health assessments of the tortoises, relocate them to previously identified Project-adjacent areas, and monitor them via telemetry, in accordance with current USFWS protocol.

WIL-3: Project Notifications and Reporting. The Applicant shall provide BLM staff with reasonable access to the Project site and compensation lands under the control of the Applicant and shall otherwise fully cooperate with BLM's efforts to verify the Project owner's compliance with, or the effectiveness of, mitigation measures. The Project's Designated Representative, in consultation with the Project's Designated Biologist shall notify the BLM AO at least 14 calendar days before initiating construction-related ground disturbance activities; immediately notify the BLM AO in writing if the Applicant is not in compliance with any required conditions of Project approval, including but not limited to any actual or anticipated failure to implement mitigation measures within the specified time periods. The Project's Designated Biologist shall:

a. ***Monitoring During Grubbing and Grading*.** Remain onsite daily while vegetation salvage, grubbing, grading and other ground-disturbance construction activities are taking place to avoid or minimize take of listed species, to check for compliance with all impact avoidance and minimization measures, and to check all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protective zones.

b. ***Monthly Inspections.*** Conduct inspections at a minimum of once per month after clearing, grubbing, and grading are completed and submit a monthly report to the Project's Designated Representative for their submittal to the BLM AO, USFWS, County, and/or CDFW during construction.

1) ***Notification of Injured, Dead, or Relocated Listed Species.*** In the event of an unauthorized take of a listed species in an active construction area (e.g., with equipment, vehicles, or workers), the BLM AO, CDFW, and USFWS shall be notified immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species. Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:

- *Injured Desert Tortoise*. If a Mojave desert tortoise is injured as a result of Project-related activities during construction, the Designated Biologist shall immediately take it to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the Applicant. Following phone notification as required above, the BLM AO, CDFW, and USFWS shall determine the final disposition of the injured animal, if it recovers. Written notification shall include, at a minimum, the date, time, location, circumstances of the incident, and the name of the facility where the animal was taken.
- *Desert Tortoise Fatality*. If a Mojave desert tortoise is killed by Project-related activities during construction or operation, submit a written report with the same information as an injury report. These Mojave desert tortoises shall be salvaged according to guidelines described in the USGS publication *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise*. The Applicant shall pay to have the Mojave desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.

c. ***Stop Work Order.*** The BLM AO may issue the Applicant a written stop work order to suspend any activity related to the construction or operation of the Project to prevent or remedy a violation of one or more required conditions of Project approval (including but not limited to failure to comply with reporting or monitoring) or to prevent the illegal take of an endangered, threatened, or candidate species. The Applicant shall comply with the stop work order immediately upon receipt thereof.

WIL-4: Compensatory Mitigation for Desert Tortoise Habitat Losses. To fully mitigate for habitat loss and potential take of Mojave desert tortoise, the Applicant shall provide compensatory mitigation at a 1:1 ratio for impacts to 3,760 acres (consisting of all vegetation alliances, but not including disturbed/developed) within the Alternative 1 footprint, adjusted to reflect the final footprint of the selected Project alternative. For the purposes of this measure, the Project footprint means all lands directly disturbed in the construction and operation of the Project, including all linear features, as well as undeveloped areas inside the Project's boundaries that will no longer provide viable long- term habitat for the Mojave desert tortoise. To satisfy this measure, the Applicant shall acquire, protect and transfer 1 acre of Mojave desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. The Applicant has another option for satisfying some or all of the requirements in this measure, in lieu of acquiring lands itself. The Applicant may satisfy the requirements of this measure by depositing funds into the REAT Account established with the NFWF, as provided below in section 3.h. of this measure. The legal authority of the in lieu fee option is outlined in WIL-11.

The timing of the mitigation shall correspond with the timing of the site disturbance activities. However, if security is posted in accordance with 3.g. below (Mitigation Security), the Applicant shall acquire the land, in fee or in easement, within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.

If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands include all of the following:

1. ***Selection Criteria for Compensation Lands.*** The compensation lands selected for acquisition in fee title or in easement shall:
    a. be within the Chuckwalla Critical Habitat Unit or, if sufficient land is unavailable, in other locations within the Colorado Desert Recovery Unit;
    b. be located outside of a DFA;
    c. provide habitat for Mojave desert tortoise with capacity to regenerate naturally when disturbances are removed;
    d. be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
    e. be connected to lands with Mojave desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover;
    f. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;
    g. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
    h. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
    i. have water and mineral rights included as part of the acquisition, unless the BLM AO, in consultation with CDFW and USFWS, agrees in writing to the acceptability of land.
2. ***Review and Approval of Compensation Lands Prior to Acquisition.*** The Applicant shall submit a formal acquisition proposal to the BLM AO, CDFW, and USFWS describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of

the proposed parcel(s) as compensation lands for Mojave desert tortoise in relation to the criteria listed above. Approval from the BLM AO and CDFW, in consultation with BLM and the USFWS, shall be required for acquisition of all compensatory mitigation parcels.

3. ***Compensation Lands Acquisition Requirements.*** The Applicant shall comply with the following requirements relating to acquisition of the compensation lands after the BLM AO and CDFW, in consultation with BLM and the USFWS, have approved the proposed compensation lands:
    a. *Preliminary Report*. The Applicant, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the BLM AO and CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the BLM AO and CDFW, in consultation with the USFWS. For conveyances to the state, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife Conservation Board.
    b. *Title/Conveyance*. The Applicant shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement. Transfer of either fee title or an approved conservation easement will usually be sufficient, but some situations, e.g., the donation of lands burdened by a conservation easement to BLM, shall require that both types of transfers be completed. Any transfer of a conservation easement or title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code §65965), or to BLM under terms approved by the BLM AO and CDFW. If an approved non-profit organization holds title to the compensation lands, a conservation easement shall be recorded in favor of CDFW in a form approved by CDFW. If an approved non-profit holds a conservation easement, CDFW shall be named a third party beneficiary.
    c. *Initial Habitat Improvement Fund*. The Applicant shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code §65965) and if it meets the approval of CDFW and the BLM AO. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.
    d. *Property Analysis Record*. Upon identification of the compensation lands, the Applicant shall conduct a PAR or PAR-like analysis to establish the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.
    e. *Long-term Maintenance and Management Fund*. The Applicant shall deposit in NFWF's REAT Account a non-wasting capital long-term maintenance and management fee in the amount determined through the PAR analysis conducted for the compensation lands.

       The BLM AO, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund, leave the money in the REAT Account, or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

f. *Interest, Principal, and Pooling of Funds*. The Applicant, the BLM AO and CDFW shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

    i. Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.

    ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.

    iii. Pooling Long-Term Maintenance and Management Fee Funds. CDFW, or a BLM AO- and CDFW-approved non-profit organization qualified to hold long- term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of Mojave desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and BLM AO.

    iv. Other expenses. In addition to the costs listed above, the Applicant shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.

g. *Mitigation Security.* The Applicant shall provide financial assurances to the BLM AO and CDFW with copies of the document(s) to the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described herein. These funds shall be used solely for implementation of the measures associated with the Project in the event the Applicant fails to comply with the requirements specified in this measure, or shall be returned to the Applicant upon successful compliance with the requirements in this measure. The BLM AO's or CDFW's use of the security to implement required measures may not fully satisfy the Applicant's obligations under this condition. Financial assurance can be provided to the BLM AO and CDFW in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the BLM AO, the Applicant shall obtain the BLM AO's and CDFW's approval, in consultation with the USFWS, of the form of the Security. Security shall be provided in the amounts calculated as follows:

i. land acquisition costs for compensation land, calculated at $500/acre.

ii. initial protection and improvement activities on the compensation land, calculated at $330/acre.

iii. Long term maintenance and management fee, calculated at $1,450 an acre.

The amount of security shall be adjusted for any change in the Project footprints for each phase as described above.

h. The Applicant may elect to fund the acquisition and initial improvement of compensation lands through NFWF by depositing funds for that purpose into NFWF's REAT Account. Initial deposits for this purpose must be made in the same amounts as the security required in 3.g., above, and may be provided in lieu of security. If this option is used for the acquisition and initial improvement, the Applicant shall make an additional deposit into the REAT Account if necessary to cover the actual acquisition costs and administrative costs and fees of the compensation land purchase once land is identified and the actual costs are known. If the actual costs for acquisition and administrative costs and fees are less than $500 an acre, the excess money deposited in the REAT Account shall be returned to the Applicant. Money deposited for the initial protection and improvement of the compensation lands shall not be returned to the Applicant.

The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a private or non-governmental organization, by written agreement of the BLM AO and CDFW. Such delegation shall be subject to approval by the BLM AO and CDFW, in consultation with the USFWS, prior to land acquisition, initial protection or maintenance and management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be implemented within 18 months of the BLM's approval.

WIL-5: Predator Management Plan. A Predator Management Plan shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit. The Predator Management Plan shall address Project characteristics and activities that may attract or subsidize common ravens, coyotes, and other predators. The Predator Management Plan shall include measures designed to: 1) minimize attracting and subsidizing ravens, coyotes, and other predators, 2) provide education to Project personnel, 3) remove raven nests, offending ravens, and other predators, and 4) implement adaptive management. The Applicant shall also provide funding for implementation of the USFWS Regional Raven Management Program, as described below.

1. The Predator Management Plan shall:
   a. Identify conditions associated with the Project that might provide subsidies or attractants for ravens, coyotes, and other predators;
   b. Describe management practices to avoid or minimize conditions that might increase predator numbers and activities;
   c. Describe control practices for ravens, coyotes, and other predators;
   d. Establish thresholds that would trigger implementation of control practices;
   e. Address monitoring and nest removal during construction and for the life of the Project, and;
   f. Discuss reporting requirements.
2. USFWS Regional Raven Management Program: The Applicant shall submit payment to the Project sub-account of the REAT Account held by NFWF to support the USFWS Regional Raven Management Program. The one-time fee shall be as described in the cost allocation methodology or more current guidance as provided by USFWS or CDFW. The contribution to the regional raven management plan will be $105 per acre impacted.

WIL-6: Bird and Bat Conservation Strategy. Prior to the Notice to Proceed, the Applicant shall finalize and implement their draft BBCS to include the following:

- Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys.
- Assess potential risk to bird and bats based on the proposed activities.
- Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species.
- Describe the incidental monitoring and reporting that will take place during construction.
- Provide details for avian and bat post-construction monitoring and reporting.
- Specify the adaptive management process that will be used to address potential adverse effects on these species.
- Monitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field for a minimum of two years.
- The monitoring data shall be used to inform a management program that would avoid and minimize Project-related avian and bat impacts. The study design shall be approved by the BLM AO in consultation with USFWS, and shall be incorporated into the Project's Biological Resources Mitigation, Implementation, and Monitoring Plan (BRMIMP; see Mitigation Measure VEG-7) and implemented.
- Post-construction mortality monitoring will be required for a minimum of two years, including the following project components: PV solar panel arrays (40% survey coverage

per year), perimeter fencing (100% survey coverage per year), and the gen-tie line (50% survey coverage per year).

The Applicant shall provide analysis to BLM evaluating the feasibility of using tanks instead of ponds for water storage. Ponds shall not be used unless specifically approved by the Authorized Officer.

The applicant shall follow APLIC guidelines for avian protection on powerlines and shall use current guidelines to reduce bird mortality from collision and electrocution with powerlines. The APLIC (2006) and USFWS recommend the following:

1. Provide 60-inch minimum horizontal separation between energized conductors or energized conductors and grounded hardware;
2. Insulate hardware or conductors against simultaneous contact if adequate spacing is not possible;
3. Use structure designs that minimize impacts to birds; and
4. Shield wires to minimize the effects from bird collisions.

WIL-7: Pre-Construction Nest Surveys. Prior to ground disturbance activities (such as initial grading or mowing activity), pre-construction nest surveys for all migratory birds shall be conducted if construction activities would begin from February 1 through August 31. For construction work within 500 feet of Bendire's thrasher suitable habitat, pre-construction surveys shall be conducted prior to work from March 1 to September 30.

The qualified biologists conducting the surveys shall be experienced bird surveyors familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). The goal of the nesting surveys shall be to identify the general location of the nest sites, sufficient to establish a protective buffer zone around the potential nest site, and need not include identification of the precise nest locations. The bird surveyors shall perform surveys in accordance with the following guidelines:

1. Surveys shall cover all potential nesting habitat areas, including the Blue paloverde-Desert Ironwood vegetation that could be disturbed by each phase of grading. Surveys shall also include areas within 200 feet of the boundaries of the active construction areas (including linear facilities);
2. Pre-construction surveys for nesting birds shall be conducted within a 14-day period preceding initiation of grading or mowing activity. Workers shall be trained in the WEAP training to identify and report nests in active construction areas, additional follow-up surveys may be required if periods of construction inactivity exceed 3 weeks, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;
3. If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the qualified biologist) and monitoring plan shall be developed. Nest locations shall be mapped and submitted, along with a report stating the survey results, to the BLM AO; and

4. The qualified biologist shall monitor the nest until he or she determines that nestlings have fledged; activities that might, in the opinion of the monitors, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.

WIL-8: American Badger and Desert Kit Fox Protection. The Applicant shall implement the following measures to avoid direct impacts to American badgers and desert kit fox:

1. ***Prepare Desert Kit Fox Management Plan*****:** At least 45 days prior to construction, the Applicant shall prepare a Desert Kit Fox Management Plan that: 1) incorporates baseline desert kit fox census findings into a cohesive management strategy that minimizes disease risk to kit fox populations; 2) specifically identifies preconstruction survey methods for kit foxes and large carnivores (e.g., badgers) in the Project area; 3) describes preconstruction and construction-phase relocation methods from the site, including the possibility for passive relocation from the site (and outlines identified CDFW permit and MOU requirements for active relocation), and; 4) coordinates survey findings prior to and during construction to meet the information needs of wildlife health officials in monitoring the health of kit fox populations. The Plan shall include contingency measures that would be performed if canine distemper were documented in the Project area or in potential relocation areas, and measures to address potential kit fox reoccupancy of the site (as documented at the Genesis site). The contents and requirements of the Plan shall be subject to review and approval by the BLM AO in consultation with USFWS and CDFW.
2. ***Implement Desert Kit Fox Management Plan:***
   a. *Pre-Construction Surveys:* Biological Monitors shall conduct pre-construction surveys for desert kit fox and American badger no more than 30 days prior to initiation of construction activities. Surveys shall also consider the potential presence of active dens within 100 feet of the project boundary (including utility corridors and access roads) and shall be performed for each phase of construction. If dens are detected each den shall be classified as inactive, potentially active, or definitely active.
   b. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox.
   c. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance.
   d. If no tracks are observed in the tracking medium or no photos of the species are captured after three nights, the den shall be excavated and backfilled by hand.
   e. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den. BLM approval may be required prior to release of badgers on public lands.
   f. If an active natal den (a den with pups) is detected on the site, as demonstrated by the procedures specified in paragraph c above, the BLM AO and CDFW shall be contacted

within 24 hours to determine the appropriate course of action to minimize the potential for animal harm or mortality. The course of action would depend on the age of the pups, location of the den on the site (e.g., is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around all active natal dens.

g. The following measures are required to reduce the likelihood of distemper transmission:

    i. No pets shall be allowed on the site prior to or during construction, with the possible exception of kit fox scat detection dogs during preconstruction surveys, and then only with prior CDFW approval;

    ii. Any kit fox hazing activities that include the use of animal repellents such as coyote urine must be cleared through CDFW prior to use, and;

    iii. Any sick or diseased kit fox, or documented kit fox mortality shall be reported to CDFW and the BLM AO within 24 hours of identification. If a dead kit fox is observed, it shall be retained and protected from scavengers until CDFW determines if the collection of necropsy samples is justified.

WIL-9: Burrowing Owl Protection and Mitigation. The Applicant shall implement the following measures to avoid, minimize and offset impacts to burrowing owls:

1. ***Pre-Construction Surveys*****:** The Qualified Biologist or Biological Monitor shall conduct pre-construction surveys for burrowing owls no more than 30 days and no less than 14 days prior to start of construction. Surveys shall be focused exclusively on detecting burrowing owls, and shall be conducted from two hours before sunset to one hour after sunrise.

2. ***Implement Burrowing Owl Mitigation Plan*****:** If burrowing owls are documented during the preconstruction surveys, the Applicant shall prepare and implement a final Burrowing Owl Mitigation Plan that is consistent with guidance provided in the CDFW (2012) *Staff Report on Burrowing Owl Mitigation*. The Plan shall be approved by the BLM AO in consultation with USFWS and CDFW, and shall identify appropriate off-site areas for creation or enhancement of burrows to support passive relocation of burrowing owls, provide details for implementing the passive burrow exclusion and relocation of burrowing owls from the Project site, and specify reporting protocol for any implemented burrowing owl mitigation measures. Active translocation may be considered, in consultation with CDFW.

3. ***Implement Avoidance Measures:*** If an active burrowing owl burrow is detected within 656 feet from the Project disturbance area the following avoidance and minimization measures shall be implemented:

    a. Establish Non-Disturbance Buffer: Caution tape shall be installed at a 250-foot radius from the occupied burrow to create a non-disturbance buffer around the burrow. The non-disturbance buffer and caution tape line may be reduced to 160 feet if all Project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1st through January 31st). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer. The appropriateness of buffer distances shall be carefully reassessed and relaxed or modified, on a case-by-case based on a review by the Qualified Biologist, and shall depend on existing conditions (e.g., vegetation/topographic screening and current disturbance regimes) and/or future development plans (e.g., increased or intensified construction activities.

b. Monitoring: If construction activities would occur within 656 feet of the occupied burrow during the nesting season (February 1 to August 31st) the Qualified Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall make recommendations to minimize or avoid such disturbance.

4. ***Acquire Compensatory Burrowing Owl Habitat*****:** If preconstruction surveys determine the presence of burrowing owls that would be impacted by the Project, consistent with CDFW mitigation guidance (CBOC 1993) the Applicant shall acquire, in fee or in easement, land suitable to support a resident population of burrowing owls and shall provide funding for the enhancement and long-term management of these compensation lands based on 6.5 acres per pair or individual bird documented during the preconstruction survey as anticipated to be impacted by the Project. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer. The responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the BLM AO, in consultation with CDFW prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat.

a. *Criteria for Burrowing Owl Mitigation Lands:* The terms and conditions of this acquisition or easement shall be as described in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements, with the additional criteria to include: 1) the mitigation land must provide suitable habitat for burrowing owls, and 2) the acquisition lands must either currently support burrowing owls or be no farther than 5 miles from an active burrowing owl nesting territory. The burrowing owl mitigation lands may be included with the Mojave desert tortoise mitigation lands ONLY if these two burrowing owl criteria are met. If the burrowing owl mitigation land is separate from the acreage required for Mojave desert tortoise compensation lands, the Applicant shall fulfill the requirements described below in this measure.

b. *Security:* If the burrowing owl mitigation land is separate from the acreage required for Mojave desert tortoise compensation lands, the Applicant or an approved third party shall complete acquisition of the proposed compensation lands within the time period specified for this acquisition (see the verification section at the end of this measure). Alternatively, financial assurance can be provided by the Applicant to the BLM AO and CDFW, according to the measures outlined in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO in the form of an irrevocable letter of credit, a pledged savings account, or another form of security ("Security") prior to initiating ground-disturbing Project activities. Prior to submittal, the Security shall be approved by the BLM AO in consultation with CDFW and the USFWS to ensure funding. The final amount due shall be determined by an updated appraisal and PAR analysis conducted as described in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements.

WIL-10: Compensatory Mitigation for Mojave Fringe-toed Lizard Habitat Losses. To mitigate for permanent habitat loss and direct impacts to Mojave fringe-toed lizards, the Applicant shall provide compensatory mitigation at a 3:1 ratio, which may include compensation lands purchased in fee or in easement in whole or in part, for impacts to Mojave fringe-toed lizard habitat, as required by the NECO Plan Amendment to the CDCA Plan (BLM 2002). Without this mitigation, the project would not be consistent with the land use plan, with which BLM is required to comply. If compensation lands are acquired, the Applicant shall provide funding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.

1. ***Criteria for Compensation Lands*****:** The compensation lands selected for acquisition shall:
    a. Be deposits of eolian or fine windblown sands typically associated with dunes, washes, hillsides, margins of dry lakes, and sandy hummocks within the McCoy Valley or Chuckwalla Valley, outside of DFAs, with potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat;
    b. To the extent feasible, be connected to lands currently occupied by Mojave fringe- toed lizard;
    c. To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
    d. Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed;
    e. Not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;
    f. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
    g. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;
    h. Not be subject to property constraints (i.e. mineral leases, cultural resources); and
    i. Be on land for which long-term management is feasible.
2. ***Security for Implementation of Mitigation*****:** The Applicant shall provide financial assurances to the BLM AO to guarantee that an adequate level of funding is available to

implement the acquisitions and enhancement of Mojave fringe-toed lizard habitat as described in this measure. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO according to the measures outlined in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements. The final amount due shall be determined by an updated appraisal and a PAR analysis conducted as described in Mitigation Measure Mitigation Measure WIL-4, Part 3, Compensation Lands Acquisition Requirements.

3. ***Preparation of Compensation Land Management Plan*****:** The Applicant shall submit to the BLM AO, CDFW and USFWS a draft Management Plan that reflects site-specific enhancement measures for the Mojave fringe-toed lizard habitat on the acquired compensation lands. The objective of the Management Plan shall be to enhance the value of the compensation lands for Mojave fringe-toed lizards, and may include enhancement actions such as weed control, fencing to exclude livestock, erosion control, or protection of sand sources or sand transport corridors.

WIL-11: In-Lieu Fees to Satisfy Compensation Requirements. The Applicant may choose to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to California Fish and Game Code §§2069 and 2099 or any other applicable in-lieu fee provision, to the extent the in-lieu fee provision is found by the California Department of Fish and Wildlife to mitigate the impacts identified herein.

WIL-12: Couch's Spadefoot Toad Protection and Mitigation. Prior to ground disturbance, the Applicant shall prepare and implement a Couch's Spadefoot Toad Protection and Mitigation Plan (Protection and Mitigation Plan) to avoid, minimize or mitigate impacts to Couch's spadefoot toads and their breeding habitat during construction, operation, and decommissioning of the Project. The Protection and Mitigation Plan shall be approved by BLM's Authorized Officer in consultation with CDFW, and shall be incorporated into the Project's BRMIMP and implemented. The Protection and Mitigation Plan shall include avoidance, minimization, and mitigation measures that would be required if occupied habitat is found during habitat surveys. The Protection and Mitigation Plan shall include, at a minimum:

1. Habitat Survey Results: a. Survey methodology; b. Survey results, including a detailed discussion of potential breeding sites, and a description of areas determined not to include breeding habitat; and c. Figures showing the areas surveyed and the location of potential breeding habitat in relation to proposed Project features.

2. Impacts Assessment from: a. Habitat disturbance from construction; b. Noise from construction, operations, and potential ORV traffic; c. Increased access for vehicles from road construction or improvements; d. Changes in breeding habitat due to changes in flow levels and flow patterns to breeding ponds; e. Increased traffic from construction and operations; f. Increased risk of predation.

3. Avoidance and Minimization Measures: a. Description of measures that would be implemented to avoid impacts to potential breeding ponds, such as design strategies; protective fencing or other barriers, worker's education, minimizing construction traffic within the vicinity

of breeding ponds, and biological monitoring; b. Designation of a Management Area around breeding ponds that includes an appropriate upland buffer, and a description of measures used to minimize impacts to within this buffer.

4. Mitigation: If complete avoidance of breeding sites identified during surveys is not possible, the plan shall include plans to create additional breeding habitats (ephemeral pond) at least equal in area to the acreage of ponds being impacted.

WIL-13: Development of Ponding Area. The Applicant would use temporary water tanks. Should the applicant find developing water tanks infeasible, the applicant would provide the BLM Authorized Officer with written request with justification why water tanks are infeasible prior to implementing onsite ponds. The written request would also include relevant measures to avoid attracting wildlife.

B.5 Cultural Resources

The following Project-specific mitigation measures were developed to reduce and/or avoid potential impacts associated with cultural resources.

CULTURAL-1: Monitoring and Discovery Plan. A Plan for Archaeological Monitoring, Post-Review Discoveries, and Unanticipated Effects (also referred to a Monitoring and Discovery Plan or MDP) shall be prepared and implemented and shall contain procedures to avoid, minimize, and mitigate effects to historic properties, and could include measures similar to the following:

1. Avoidance of cultural resources is the preferred mitigation measure. On the basis of preliminary NRHP eligibility assessments or existing NRHP eligibility determinations, the BLM may require the relocation of Project components to avoid or reduce damage to cultural resource values. Where operationally feasible, potentially NRHP--eligible resources shall be protected from direct Project impacts by Project redesign within previously surveyed and analyzed areas.
2. Where NRHP--eligible or -listed historic properties cannot be protected from direct effects by Project redesign, the Applicant shall comply with appropriate treatment(s) that will be detailed in the MDP. An example of treatment is data recovery at affected sites.
3. All NRHP-listed or eligible cultural resources, and unevaluated cultural resources being treated as eligible (as determined by the BLM) that will not be affected by direct impacts, but are within 50 feet of Project construction activities, shall be monitored during ground disturbing activities by a qualified archaeologist. Protective fencing or other markers, at the BLM’s discretion, shall be erected and maintained to protect these resources from inadvertent trespass for the duration of construction in the vicinity.

CULTURAL-2: Long-Term Management Plan (LTMP). The Applicant shall prepare a Long-Term Management Plan (LTMP) for protection and management of NRHP-eligible cultural resources within the Project area/ROW boundaries during Project operations and decommissioning.

CULTURAL-3: Identification of Human Remains. For human remains discovered on BLM land, the process for securing the site, notification of responsible parties, and subsequent actions shall be identified in the MDP required by Mitigation Measure CULTURL-1 and CULTURAL-5. The actions to be identified include compliance with State Health and Safety Code Section 7050.5 and consultation with Native Americans if appropriate and actions to comply with NAGPRA (25 U.S.C.§ 3001) relative to the discovery and handling of NAGPRA defined items such as human remains, funerary objects, sacred objects, or objects of cultural patrimony.

For human remains encountered on private lands, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin. Further, pursuant to PRC Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the NAHC shall be contacted within the period specified by law. The NAHC shall identify the “Most Likely Descendant,” who shall then make recommendations to and engage in consultation with the County and property owner concerning the treatment of the remains as provided in PRC Section 5097.98. The landowner may reach an agreement with the Most Likely Descendant for treating and disposing of human remains pursuant to state CEQA Guidelines Section 15064.5(d). Human remains from other ethnic/cultural groups with recognized historical associations to the Project area shall also be subject to consultation between appropriate representatives from that group and the County Archaeologist.

CULTURAL-4: Unanticipated Discoveries. If, during ground disturbance activities associated with construction, operation and maintenance, or decommissioning, archaeological sites are discovered that were not identified and evaluated in the archaeological survey reports or the Final PA/EIS/EIR conducted prior to Project approval, and the following procedures shall be followed and incorporated into the MDP, required in CULTURAL-1.

1. All ground disturbance activities within 100 feet of the discovered cultural resource shall be halted and the applicant shall notify the Project archaeologist, the Native American Tribal Participant as appropriate, the BLM Field Office Archaeologist, and (on non-Federal land) the County archaeologist to discuss the significance of the find.
2. At the meeting, the significance of the discoveries shall be discussed in consultation with the Project archaeologist and as appropriate the Native American Tribal Participant. The BLM alone shall determine the appropriate treatment for historic properties discovered on BLM-managed lands in accordance with 36 CFR 800.13. The BLM shall determine the appropriate mitigation (documentation, evaluation, recovery, avoidance, etc.) for historic properties on BLM-administered lands. In determining the appropriate treatment on BLM-administered land, the BLM shall follow requirements of 36 CFR Part 800.13 for post-review discoveries and unanticipated effects.
3. Further ground disturbance shall not resume within the area of the discovery until a meeting is convened with the aforementioned parties and a decision is made with the concurrence of the BLM as to the appropriate preservation or mitigation measures. The Applicant shall comply with the determinations of the BLM.

CULTURAL-5: Geoarchaeological Testing for Monitoring and Discovery Plan. Prior to issuance of the NTP, the Applicant shall have the Secretary of the Interior Qualified Project Archaeologist prepare and submit for approval to the BLM a MDP, per CULTURAL-1. Prior to development of the MDP, the Applicant shall conduct geoarchaeological testing to determine the most appropriate means of monitoring to be used during each type of construction activity. The MDP shall include a map of all cultural resources within the APE, as described in the Final PA/EIS/EIR. The MDP shall also detail how resources, if any, are determined eligible or resources that are unevaluated but avoided by Project design, would be marked and protected as Environmentally Sensitive Areas during construction. The MDP shall also map additional areas that are considered to be of high sensitivity for discovery of buried significant archaeological resources, including burials, cremations, or sacred features. The MDP shall detail provisions for monitoring construction in these high-sensitivity areas, incorporating the results of the geoarchaeological testing. It shall also detail procedures for halting construction, making appropriate notifications to agencies, officials, and Native American tribes, and assessing NRHP eligibility in the event that unknown archaeological resources are discovered during construction.

CULTURAL-6: Native American Tribal Participant. Prior to any ground disturbances within the Project area, the Applicant shall, for a period of at least 60 days, make a good faith effort to retain participants to observe ground disturbances designated by Tribal representatives. These participants shall be known as the Native American Tribal Participants for this Project. Documentation of efforts shall be submitted to the BLM.

CULTURAL-7: Cultural Resources Monitoring Report. Prior to the final inspection of the first building permit, the Applicant shall prompt the Project Archaeologist to submit one (1) wet-signed hard copy and one (1) CD of a Cultural Resources Monitoring Report that meets BLM standards and requirements for Cultural Resource Monitoring Reports and other cultural resource reports. The report shall include documentation of the required cultural/historical sensitivity training for the construction staff held during the pre-grade meeting, which shall include the BLM. BLM shall review the report to determine adequate mitigation compliance. The accepted report shall be submitted to the BLM, Eastern Information Center, and as determined by the BLM, the Patton Memorial Museum, interested tribes, and other parties.

CULTURAL-8: Worker Environmental Awareness Program (WEAP). Prior to issuance of a Notice to Proceed by BLM and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The training shall be prepared by the Project Archaeologist, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The Project Archaeologist shall be available (by telephone or in person) to answer questions posed by employees. The Native American Tribal Participant shall be given the opportunity to participate in the training. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:

- A discussion of applicable laws and penalties under the law;

- Samples or visuals of artifacts that might be found in the project vicinity;
- A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
- A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
- Instruction that the Project Archaeologist, alternate Project Archaeologist, and supervisory archaeology field staff have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the Project Archaeologist;
- Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the Project Archaeologist or supervisory archaeology field staff, and that redirection of work would be determined by the construction supervisor and the Project Archaeologist;
- An informational brochure that identifies reporting procedures in the event of a discovery;
- An acknowledgement form signed by each worker indicating that they have received the training; and
- A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the BLM project manager.

B.6 Environmental Justice

No mitigation measures are specifically recommended for environmental justice impacts. Mitigation measures are proposed to reduce impacts for several of the specific resource areas which could result in disproportionately high or adverse impacts on minority and/or low-income populations, including air quality, recreation, transportation and traffic, visual resources, and water resources. These were considered as part of the environmental justice analysis.

B.7 Geology and Soils

The following Project-specific mitigation measures were developed to reduce and/or avoid potential impacts associated with geologic hazards, and potential impacts to soil resources associated with the Project and alternatives.

GEO-1: Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design. The Applicant and/or its contractor shall perform a design-level geotechnical study that includes subsurface exploration and material testing necessary to determine the 2013 CBC seismic design category and site soil class for which each of the Project components must be designed. The geotechnical study shall address geologic hazards including, but not necessarily limited to, slope stability, rock fall hazards, landslide hazards, surface fault rupture, fissures, liquefaction potential, collapsible and/or expansive soils, hydroconsolidation, subsidence, wind and water erosion, debris flows, seiche, and groundshaking potential. Based on the nature, location and severity of adverse soil conditions, the geotechnical study shall recommend appropriate and feasible design features necessary to reduce the potential for liquefiable, expansive, corrosive or collapsible soils to adversely affect DQSP facilities. Such measures might include use of corrosion-resistant materials and coatings; use of non-corrosive, non-expansive backfills; use of cathodic protection systems; soil-treatment processes; redirection of surface water and drainage away from expansive foundation soils; and/or any other combination of soil preparation methods or foundation designs necessary to avoid or reduce the adverse effects of soils on Project structures.

Studies shall be carried out by a registered geologist or certified geotechnical engineer, and shall conform to industry standards of care and ASTM standards for field and laboratory testing. For completeness and direct correlation to the Proposed Action, the Applicant shall provide the geotechnical consultant with the most recent copy of the Project case exhibit (tract map, parcel map, plot plan, etc.) for incorporation into the report. Furthermore, the consultant shall plot all appropriate geologic and geotechnical data on this case exhibit and include it as an appendix/figure/plate in their report. Study results and proposed solutions shall be provided for review and approval to the BLM at least 60 days before final Project design, and to the County Engineering Geologist prior to scheduling the case for a public hearing.

B.8 Project Design

The following Project-specific mitigation measures were developed to reduce and/or avoid potential impacts associated with the Project and alternatives design.

GHG-1: Seal Circuit Breakers. All SF_6-containing circuit breakers that will be installed for each power unit shall be hermetically sealed.

B.9 Hazards and Hazardous Materials

The following Project-specific mitigation measures were developed to reduce and/or avoid potential hazard and hazardous materials impacts associated with the Proposed Action and alternatives.

HAZ-1: Site-Specific Hazardous Materials Management and Emergency Response Plan. Prior to the Notice to Proceed, the Applicant shall prepare and implement a site-specific Hazardous Materials Management and Emergency Response Plan. The plan shall identify the chemicals potentially present in onsite soils, health and safety hazards associated with those chemicals, monitoring to be performed during site activities, soil handling and disposal methods required to minimize the potential for harmful exposures, appropriate personal protective equipment, and emergency response procedures. The Plan shall be included in and implemented as part of the Project's larger Safety and Health Program. The plan shall be submitted to the BLM and County for approval prior to commencement of construction activities and shall be distributed to all construction crew members prior to construction, operation, and decommissioning of the Project.

The Phase I Environmental Site Assessment (ESA) conducted for the Project site in 2015 identified two suspected groundwater supply wells, which were observed to be open and unsecured. In addition, hazardous substances, in the form of partially-filled oil and lubricant containers and other trash and debris, were observed on the private land parcel. There have been no subsequent response actions, including securing of the groundwater wells or sampling of environmental media, to verify whether site contamination currently exists. Prior to a notice to proceed for construction, the Applicant shall conduct additional hazardous substances investigations to establish a baseline hazardous contamination condition of groundwater and soils at the site. Hazardous materials containers currently onsite shall be removed and disposed properly. Soils in the area of these containers shall be sampled to determine whether soils impacted by pesticide-related contaminants are present. If present, contaminated soils shall be removed and disposed properly prior to construction in those areas. The Applicant shall sample groundwater in the vicinity of the two wells to document pre-Project groundwater quality, and then cap and secure any existing wells not used for construction or operations. Water quality and hazardous release testing of all wells and leach field would be conducted on a monthly basis and reported to the BLM Authorized Officer.

HAZ-2: Broken PV Module Detection and Handling. Damaged or broken modules shall be recycled or disposed of in an appropriately licensed landfill.

HAZ-3: Aircraft Safety Consultation. The Applicant shall consult with FAA to determine the requirements for filing FAA Forms 7460-1, Notice of Proposed Construction or Alteration, and 7460-2, Notice of Actual Construction or Alteration at least 45 days prior to the start date of construction. If such filing is required, the Applicant shall receive a "Determination of No Hazard to Air Navigation" in order to proceed.

UXO-1: UXO Identification, Training, and Reporting Plan. The Applicant shall prepare and implement a UXO Identification, Training, and Reporting Plan to properly train all site workers in the recognition, avoidance, and reporting of military waste debris and ordnance. The Applicant shall submit the plan to the BLM for review and approval prior to the start of construction. The plan shall contain, at a minimum, the following:

1. A description of the training program outline and materials, and the qualifications of the trainers;
2. Identification of available trained experts that will respond to notification of discovery of any suspected ordnance (unexploded or not);
3. Procedures to stop work immediately in the vicinity of suspected UXO and to notify the local CUPA and the U.S. Army Corps of Engineers;

4. A work plan to recover and remove discovered ordnance, and complete additional field screening, possibly including geophysical surveys to investigate adjacent areas for surface, near-surface or buried ordnance in all proposed land disturbance areas.
5. Documentation of all surveys and investigations performed to evaluate and remove discovered ordnance.

The Applicant shall submit the UXO Identification, Training, and Reporting Plan to the BLM for approval no less than 30 days prior to the initiation of construction activities at the site or within the linear corridors, as appropriate. The results of geophysical surveys shall be submitted to the BLM within 30 days of completion of the surveys.

TLSN-1: Radio Frequency Interference. The Applicant shall limit the conductor surface electric gradient in accordance with the IEEE Radio Noise Design Guide for High-Voltage Transmission Lines. After energizing the gen-tie line, the Applicant shall respond to and document all radio frequency interference complaints received and the responsive action taken. These records shall be made available to the BLM for review upon request.

B.10 Lands, Realty, and Agricultural and Forestry Resources

No mitigation measures are required to reduce impacts related to lands and realty and land use planning. The Project would conform to power industry standards and best practices for the co-location of utility lines. Where the IOPs associated with use of the Section 368 corridor require mitigation, that mitigation is considered under the applicable resource sections, as shown in Appendix F, Table F-1 of the Final PA/EIS/EIR.

B.11 Mineral Resources

No mitigation measures are recommended.

B.12 Noise

The following mitigation measures would be imposed by the BLM to avoid or reduce noise impacts on residents:

NOISE-1: Noise Level Monitoring. The Applicant shall monitor noise levels at the NNSR location daily for one week before and for one week at the beginning of Month 6, when overlap of construction activity #3 and activity #5 (as defined in the Applicant's Noise Technical Report, URS 2015) begins, to verify that energy equivalent noise levels (Leq) measured over a 20-minute period do not increase between the two measurement periods by more than 10 dBA. If this limit is not exceeded, the Applicant may present results to BLM and the County to request that the requirement for further monitoring be eliminated. If the limit is exceeded, the Applicant shall work with BLM, the County, and affected residents to achieve the necessary reduction or otherwise mitigate the effect.

B.13 Paleontological Resources

The following mitigation measures would be imposed by the BLM to avoid and, if necessary, mitigate any impacts to paleontological resources:

PAL-1: Project Paleontologist. Prior to the issuance of a Notice to Proceed by BLM, a qualified paleontologist approved by the BLM to serve as Project Paleontologist shall be retained by the project owner. This individual shall retain a BLM paleontological resource use permit for the project and a paleontological permit from the County of Riverside. To do so, this individual shall have the following qualifications as stipulated in BLM Manual 8270-1 Chapter IV:

1. Professional instruction in a field of paleontology relevant to the work proposed (vertebrate, invertebrate, trace, paleobotany, etc.), obtained through:
    a. Formal education resulting in a graduate degree from an accredited institution in paleontology, or in geology, biology, botany, zoology or anthropology if the major emphasis is in paleontology; or
    b. Equivalent paleontological training and experience including at least 24 months under the guidance of a professional paleontologist who meets qualification above that provided increased responsibility leading to professional duties similar to those in qualification above; and
2. Demonstrated experience in collecting, analyzing, and reporting paleontological data, similar to the type and scope of work proposed in the application;
3. Demonstrated experience in planning, equipping, staffing, organizing, and supervising crews performing the work proposed in the application;
4. Demonstrated experience in carrying paleontological projects to completion as evidenced by timely completion and/or publication of theses, research reports, scientific papers and similar documents.

The project owner shall provide the BLM Authorized Officer with the resume and qualifications of its Project Paleontologist for review and approval. The Project Paleontologist resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the BLM Authorized Officer the appropriate education and experience to accomplish the required paleontological resource tasks. If the approved Project Paleontologist is replaced prior to completion of project mitigation and submittal of the Paleontological Resources Report, the project owner shall obtain BLM Authorized Officer approval of the replacement Project Paleontologist.

As described in BLM IM 2009-011, the Project Paleontologist will serve as the Principal Investigator (PI) under the BLM permit and is responsible for all actions under the permit, for meeting all permit terms and conditions, and for the performance of all other personnel. This person is also the contact person for the project proponent and the BLM.

Additional Paleontological Staff – The Project Paleontologist may obtain the services of Paleontological Field Agents, Field Monitors, and Field Assistants, if needed, to assist in mitigation, monitoring, and curation activities. These individuals must meet the qualifications as stipulated in BLM Manual 8270 1 Chapter IV and BLM IM 2009-011, and their resumes must be reviewed and approved by BLM as part of the BLM paleontological resource use permit process.

PAL-2: Materials for Project Paleontologist and BLM Authorized Officer. The project owner shall provide to the Project Paleontologist and the BLM Authorized Officer, for approval, maps and drawings showing the footprint of the power plant, construction lay-down areas, and all related facilities. Maps shall identify all areas of the Project where ground disturbance is anticipated. If the Project Paleontologist requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the Project Paleontologist and BLM Authorized Officer. The site grading plan, and plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet. If the footprint of the Project or its linear facilities changes, the project owner shall provide maps and drawings reflecting those changes to the Project Paleontologist and BLM Authorized Officer.

If construction of the Project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the Project Paleontologist and BLM Authorized Officer. Before work commences on affected phases, the project owner shall notify the Project Paleontologist and BLM Authorized Officer of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the Project Paleontologist or Paleontological Resources Monitor (PRM) consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week and until ground disturbance is completed.

PAL-3: Paleontological Resources Monitoring and Mitigation Plan (PRMMP). Prior to the issuance of a Notice to Proceed by BLM, the Project Paleontologist shall submit a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) for the Project to the BLM for review and approval. The appropriate Paleontology Lead or Regional Paleontologist shall review the plan for sufficiency prior to acceptance. Approval of the PRMMP by the BLM Authorized Officer shall occur prior to any ground disturbance.

The PRMMP shall be prepared and implemented under the direction of the Project Paleontologist and shall address and incorporate MM PAL-1 through MM PAL-7. The PRMMP shall be prepared at the sole expense of the project proponent, and meet all current BLM and Riverside County regulatory requirements, including BLM 8270 manual and handbook, BLM IM No. 2009-011 Assessment and Mitigation of Potential Impacts to Paleontological Resources, and BLM IM No. 2016-124 Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on public lands. The PRMMP shall also comply with the Paleontological Resources Preservation Act and final DOI PRPA rules.

The PRMMP shall function as the formal guide for survey, monitoring, collecting, and sampling activities and may be modified with BLM Authorized Officer approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the Project Paleontologist, each monitor, the project owner's on-site manager, and the BLM Authorized Officer.

A monitoring plan indicates the avoidance or treatments recommended for the area of the proposed disturbance and must minimally address the following:

1. The design of a PFYC assessment and pedestrian paleontological survey for any as-of-yet unsurveyed Project areas with PFYC 3, 4, 5, or unknown classification, the results of which will be used to map impact areas affecting geologic units with moderate to high sensitivity that will require monitoring or spot-checking during construction;
2. A coordination strategy to ensure that a qualified paleontologist (MM PAL-1) will conduct paleontological survey and monitoring at the appropriate locations at the appropriate intensity;
3. The significance criteria to be used to determine which resources will be avoided or recovered for their data potential;
4. Procedures for the discovery, recovery, preparation, and analysis of paleontological resources encountered during construction, in accordance with standards for recovery established by the SVP and the BLM;
5. Provisions for verification that the project proponent has an agreement with a recognized museum repository, for the disposition of recovered fossils and that the fossils shall be prepared prior to submittal to the repository as required by the repository (e.g., prepared, analyzed at a laboratory, curated, or cataloged);
6. Specifications that all paleontological work undertaken by the project proponent on public land shall be carried out by qualified paleontologists with appropriate current permits (MM PAL-1), including but not limited to a Pale- ontological Resources Use Permit (for work on public lands administered by BLM) and a Riverside County permit (for work on lands administered by the County of Riverside);
7. Description of monitoring reports that will be prepared which shall include daily logs, monthly reports, and a final monitoring report with an itemized list of specimens found to be submitted to the BLM, the Riverside County Planning Department, the project proponent and the designated repository within 90 days of the completion of monitoring;
8. The implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post- ground–disturbance analysis phases of the project shall be specified; and
9. Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team shall be identified.
10. All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise

restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.

PAL-4: Approved Training Pertaining to Ground Disturbance. Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the Project Paleontologist shall prepare and conduct BLM Authorized Officer -approved training for the following workers: project managers, construction supervisors, foremen, and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving BLM Authorized Officer-approved worker training. Worker training shall consist of an initial in-person Project Paleontologist training or may utilize a BLM Authorized Officer-approved video or other presentation format during the project kickoff for those mentioned above. Following initial training, a BLM Authorized Officer-approved video or other approved training presentation/materials, or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to BLM Authorized Officer-approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the BLM Authorized Officer.

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the Project Paleontologist or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the Project Paleontologist or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

PAL-5: Paleontological Monitoring Activities. The project owner shall ensure that the Project

Paleontologist and PRM(s) monitor consistent with the PRMMP in all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the Project. In the event that the Project Paleontologist determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence of the BLM Authorized Officer. The project owner shall ensure that the Project Paleontologist and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the Project Paleontologist. Monitoring activities shall be conducted as follows:

1. Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the Project Paleontologist and the project owner to the BLM Authorized Officer prior to the change in monitoring and will be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the BLM Authorized Officer for review and approval.

2. The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The Project Paleontologist may informally discuss paleontological resource monitoring and mitigation activities with the BLM Authorized Officer at any time.

3. The project owner shall ensure that the Project Paleontologist notifies the BLM Authorized Officer within 24 hours of the occurrence of any incidents of non-compliance. The Project Paleontologist shall recommend corrective action to resolve the issues.

4. For any significant paleontological resources encountered, either the project owner or the Project Paleontologist shall notify the BLM Authorized Officer within 24 hours, or Monday morning in the case of a weekend event, where construction has been halted because of a paleontological find. The project owner shall ensure that the Project Paleontologist prepares a summary of monitoring and other paleontological activities placed in the monthly compliance reports. The summary will include the name(s) of Project Paleontologist or PRM(s) active during the month; general descriptions of training and monitored construction activities; and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the Project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the BLM Authorized Officer. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

PAL-6: Implementation of PRMMP. The project owner, through the designated Project Paleontologist, shall ensure that all components of the PRMMP are adequately performed including completion of the PPS, collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during PPS and project construction.

PAL-7: Paleontological Resources Report (PRR). The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated Project Paleontologist. The PRR shall be prepared within 30 days following completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and submit it to the BLM Authorized Officer for review and approval. The report shall include, but is not limited to determinations of sensitivity and significance; a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; and a statement by the Project Paleontologist that project impacts to paleontological resources have been mitigated below the level of significance. At a minimum the final report must include the following details as specified by BLM IM 2009-011:

1. Name, affiliation, address, date of report, and permit number (if consultant) of the paleontologist doing the survey.
2. Project name and number (if used), name of proponent, and general location of project.
3. Date(s) of the survey and names of any personnel assisting with the survey.
4. Brief description of project and expected impacts to paleontological resources.
5. A summary of mitigation performed.
6. A summary of findings, including important discoveries.
7. A description of potentially fossiliferous areas to allow for future assessment of sites, even if no fossils were located during the project monitoring.
8. A completed BLM locality form 8270-3 or equivalent for each new locality using Universal Transverse Mercator (UTM) NAD 83 coordinates, and 1:24000 scale maps with new localities plotted using points or polygons as appropriate. Locality forms, maps, and any other information containing specific fossil locations should be bound separately or assembled as a separate section to allow for preservation of confidential locality data.
9. List of specimen field numbers and field identifications of collected material, cross-referenced to the locality field number.

B.14 Recreation and Public Access

The following mitigation measures would be imposed by the BLM to avoid or reduce impacts on recreation and public access:

REC-1: Access to Mule Mountains ACEC. The Applicant shall ensure that the alternative access route to the Mule Mountains ACEC (identified in Figure 3.14-3) is accessible by performing light clearing and grading prior to Project construction, and then periodically throughout the duration of the Project. The alternative access route shall be marked by signage provided by the Applicant, and supported by the installation of a kiosk at a location to be determined by BLM. The Applicant shall conduct recording of historic/prehistoric trails prior to ground disturbance. Biological monitoring shall be performed during active ground disturbance.

The Applicant shall prepare and distribute interpretive materials, approved by the AO, including a construction schedule, safety information regarding trucks and other heavy equipment on local roads, and available open OHV routes to users of the Midland, Mule Mountains, and La Posa Long-Term Visitor Areas (LTVAs), Wiley's Well and Coon Hollow Campgrounds, and BLM kiosks announcing the development of the solar facilities at the Project site and the closure of the affected public land and six open routes to recreational use. The Applicant shall prepare a one-page fact sheet about the Project and submit it to the Palm Springs-South Coast Field Office for review. The BLM AO shall approve the draft materials prior to distribution.

REC-2: Temporary Route Closure. No less than 60 days prior to construction and maintenance of the gen-tie line, the Applicant shall coordinate with the AO administering the NECO Plan-designated route 660703 to establish temporary closure of the route to avoid construction/maintenance area hazards, if the route is deemed unsafe to use during construction or maintenance of the gen-tie line. The Applicant shall post a public notice of the temporary route closure and penalties for any off-route OHV activities, and shall coordinate the closure with applicable emergency response agencies. The Applicant shall document its coordination efforts with the AO and submit this documentation to the BLM and other agencies affected at least 30 days prior to construction.

REC-3: Use of LTVAs. The Applicant shall encourage Project workers to utilize local housing or private RV parks in Blythe and/or nearby communities. The Applicant shall encourage Project workers to utilize local housing or private RV parks in Blythe and/or nearby communities. If the Applicant sees a need to use the LTVAs, the Applicant shall seek additional authorization from the BLM prior to their use. If the BLM authorizes use of the LTVA, the BLM shall monitor the impact of workers using the LTVAs, including space and experience for recreational users, and condition of access roads to the LTVAs. Workers would only use the campgrounds during the LTVA season, and must supply their own water from offsite. The Applicant shall coordinate with the County to provide either hardening of the access roads, or monthly blading during the LTVA season.

B.15 Social and Economic Effects

No mitigation measures are recommended.

B.16 Special Designations and Lands with Wilderness Characteristics

No mitigation measures would be imposed by the BLM related to special designations or lands with wilderness characteristics.

B.17 Transportation and Traffic

The following Project-specific mitigation measures were developed to reduce and/or avoid potential transportation and traffic impacts associated with the Proposed Action and alternatives.

TRN-1: Traffic Monitoring and Control Plan. Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant's Traffic Monitoring and Control Plan shall be submitted to the BLM and County for approval. The Traffic Monitoring and Control Plan, described in APM TRA-2, shall be developed and implemented to include the following features:

1. The Applicant and/or its contractor shall coordinate development and implementation of this plan with the BLM and other jurisdictional agencies (e.g., Riverside County and Caltrans), as appropriate.
2. To the extent applicable, the traffic control plan shall conform to Part 6 (Temporary Traffic Control) of the California Manual on Uniform Traffic Control Devices (Caltrans 2010), and shall include, but not be limited to, the following elements:
3. Implementing circulation and detour plans to minimize impacts on local road circulation during temporary lane closures. Flaggers and/or signage shall be used to guide vehicles through and/or around the work zone.
4. Identifying truck routes designated by Riverside County and local jurisdictions. Haul routes that minimize truck traffic on local roadways shall be utilized to the extent possible.
5. Providing sufficient-sized staging areas for trucks accessing work zones to minimize disruption of access to adjacent public right-of-ways.
6. Scheduling truck trips outside the peak morning and evening commute hours to the extent possible.
7. Limiting the duration of lane closures to the extent possible.
8. Storing all equipment and materials in designated contractor staging areas on or adjacent to the worksite, such that traffic obstruction is minimized.
9. Implementing roadside safety protocols. Advance "Road Work Ahead" warning and speed control signs (including those informing drivers of state-legislated double fines for speed infractions in a work zone) shall be posted to reduce speeds and provide safe traffic flow through the work zone.
10. Providing advance notification to administrators of police and fire stations (including fire protection agencies), ambulance service providers, and recreational facility managers of the timing, location, and duration of construction and decommissioning activities and the locations of detours and lane closures, where applicable. Maintain access for emergency vehicles within, and/or adjacent to, roadways affected by construction and decommissioning activities at all times.
11. Repairing and restoring adversely affected roadway pavements to their pre-construction condition.

TRN-2: Coordinated Transportation Management Plan. Prior to construction, the Applicant shall develop a Coordinated Transportation Management Plan and work with the BLM and Riverside County to prepare and implement a plan for roadways adjacent to and directly affected by the planned Project facilities, and to address the transportation impact of the multiple overlapping construction projects within the vicinity of the Project in the region. The Coordinated Transportation Management Plan shall include, but not be limited to, the following requirements:

1. Coordination of individual traffic control plans for the Project and nearby projects.
2. Coordination between the contractor and Riverside County in developing circulation and detour plans that include safety features (e.g., signage and flaggers). The circulation and detour plans shall address:
    - Full and partial roadways closures;
    - Circulation and detour plans to include the use of signage and flagging to guide vehicles through and/or around the construction zone, as well as any temporary traffic control devices;
    - Bicycle detour plans, where applicable;
    - Parking along arterial and local roadways; and
    - Haul routes for construction trucks and staging areas for instances when multiple trucks arrive at the work sites.
3. Protocols for updating the Coordinated Transportation Management Plan to account for delays or changes in the schedules of individual projects.

The Coordinated Transportation Management Plan shall incorporate an access road siting and management plan, and transportation plan for the transport of transmission tower components and equipment, in accordance with the requirements of the IOPs for the Section 368 corridor.

The Coordinated Transportation Management Plan shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit.

TRN-3: Reduce Construction Worker Vehicles. Prior to the Notice to Proceed, APM TRA-1 shall be modified to further reduce the number of construction worker vehicles leaving the Project site during the PM peak hour, such that the intersection of SR-78/16th Avenue operates at LOS C or better. The Applicant used an iterative analysis to determine that a maximum of 650 vehicles during the PM peak hour was necessary to achieve operation of the intersection at LOS D. The Applicant shall re-perform the iterative analysis to determine the maximum number of vehicles necessary to achieve operation of the intersection at LOS C, and then implement the measure to limit the vehicles to this number. The revised analysis shall be submitted to BLM and the County for review and approval.

TRN-4: Improve Access Road. Prior to construction of the solar facility, gen-tie, and other facilities, the Applicant shall complete improvements to 16th Avenue/Seeley Avenue between

Neighbours Boulevard (State Route 78) and the site entrance. The Applicant shall improve 16th Avenue to applicable County standards through the use of dust suppressants and measures described in the Project's Dust Control Plan (MM AQ-1) through paving, or through equivalent means. Any proposed improvements shall be reviewed and approved by the Riverside County Transportation department prior to implementation. The improvements shall include pavement of the intersection of 16th Avenue/Seeley Avenue and State Route 78 to allow for a turning lane off of 16th Avenue/Seeley Avenue onto State Route 78.

Prior to road improvements, survey monuments shall be located and tied out, and corner records filed with the County Surveyor. A grading plan shall be submitted to the County transportation department for review and approval prior to issuance of a grading permit. Completion of road improvements shall not imply acceptance for maintenance by the County. Traffic signing and striping shall be performed by the County, with all costs borne by the Applicant, unless otherwise approved by the County Traffic Engineer.

Environmental impacts associated with this measure and mitigation measures that would minimize these impacts are shown in Table B-2.

Table B-2. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Air Resources	Regional description of the Project area in Section 3.2 applies to the entire access road. Access road may pass closer to locations of residents than the Project itself.	Additional criteria pollutant and greenhouse gas emissions would occur from vehicle worker travel and equipment used to construct this project. Since the activities associated with TRN-4 would occur before construction of the project, and since the numbers of workers, equipment, and acreage of dust disturbance would be less than that of the Project, (for example, 20 acres of disturbance vs. 3,770 for the Proposed Action), emissions would not likely exceed the Construction Daily Emission Estimations reported for the Proposed Action in Table 4.2-2, or increase the Construction Annual Emission Estimations reported in Table 4.2-3. Even with several sets of pavers, rollers, and other equipment operating simultaneously, their emissions would not exceed maximum daily emissions thresholds for criteria pollutants, based on modeling of a recent smaller but similar roadway repaving project in Riverside County (Urban Crossroads 2018). Emissions and odors may occur in close proximity to residences and businesses along the roadway. These would be temporary, occurring only for less than a day or two as construction moved past each specific receptor. Once completed, the road improvements would reduce the fugitive dust emissions reported in Tables 2.4-2 and 4.2-3, a beneficial effect of this measure.	Dust Control Plan (AQ-1), and Construction Emissions Reduction (AQ-3)

Table B-2. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Biological Resources - Vegetation	Regional description of the Project area in Section 3.3 applies to the entire access road. Resources expected to be limited/non-existent within the existing ROW. Specific presence of resources to be determined in pre-construction surveys (see mitigation measures)	Since all road improvement activities would occur within the previously existing easement, and pre-construction surveys would be required to identify any potentially impacted special-status plants or state jurisdictional waters adjacent to the roadway, no impacts would occur.	Designated Biologist (VEG-1 through 5), Worker Environmental Awareness Program (VEG-6), Biological Resources Mitigation, Implementation, and Monitoring Plan (APM-BIO-1 and VEG-7), General Construction Measures and Plans (APM-BIO-2, APM-BIO-3, and VEG-8), Special Status Plant Avoidance and Vegetation Resources Management Plan (APM-BIO-4 and VEG-9), Mitigation for Impacts to State Jurisdictional Waters (VEG-10), and Integrated Weed Management Plan (APM-BIO-5)
Biological Resources - Wildlife	Regional description of the Project area in Section 3.4 applies to the entire access road. Resources expected to be limited/non-existent within the existing ROW. Specific presence of resources to be determined in pre-construction surveys (see mitigation measures)	Since all road improvement activities would occur within the previously existing easement, pre-construction surveys would be required to identify any potentially impacted special-status wildlife or birds adjacent to the roadway, and Biological Monitoring of construction activities would be required, no impacts would occur.	Pre-construction tortoise survey and avoidance (WIL-1), tortoise translocation (WIL-2), notifications and reporting (WIL-3), Predator Management Plan (WIL-5), Bird and Bat Conservation Strategy (WIL-6), pre-construction nest surveys (WIL-7), badger and kit fox protection (WIL-9), Burrowing Owl protection (WIL-10), and Couch's spadefoot toad protection (WIL-12)

Table B-2. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Cultural Resources	Regional description of the Project area in Section 3.5 applies to the entire access road. Resources expected to be limited/non-existent within the existing ROW. Specific presence of resources to be determined in pre-construction surveys (see mitigation measures)	Since all road improvement activities would occur within the previously existing easement, pre-construction surveys would be required to identify any potentially impacted cultural resources within or adjacent to the roadway, and monitoring of construction activities would be required, no impacts would occur.	Unanticipated human remains (private land section of CULTURAL-3), unanticipated cultural resources (non-Federal land requirements of CULTURAL-4), Native American Tribal Monitor (CULTURAL-6), and Cultural Resources Monitoring Report (CULTURAL-7)
Environmental Justice	Regional description of the Project area in Section 3.6 applies to the entire access road. No other site-specific resources expected.	The improved-roadway would not affect environmental justice populations. No impacts are expected.	None.

Table B-2. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Geology and Soils	Regional description of geologic hazards in the Project area in Section 3.7 applies to the entire access road. No other site-specific geologic resources or hazards expected within existing roadway. Soils within the roadway have already been disturbed.	The improved roadway would not be affected by geologic or soil hazards. No impacts are expected.	None.
Climate Change	Regional description of the Project area in Section 3.8 applies to the entire access road.	Additional greenhouse gas emissions would occur from vehicle worker travel and equipment used to construct this project. These emissions are expected to be nominal compared to those of the Proposed Action.	None.
Hazards and Hazardous Materials	Regional description of the Project area in Section 3.9 applies to the entire access road. No other site-specific hazards expected within existing roadway.	As with the Proposed Action, releases of hazardous materials could occur if any unknown materials are encountered during ground disturbance, or if releases occur from vehicles or equipment. In general, the potential for releases is expected to be minimal compared to that of the Project, due to a much shorter duration of construction, and much reduced amount of equipment and vehicles. With compliance with the Hazardous Materials Management and Emergency Response Plan, impacts are expected to be less than significant.	Hazardous Materials Management and Emergency Response Plan (HAZ-1), and UXO Identification, Training, and Reporting (UXO-1)

Table B-2. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Lands, Realty, and Agricultural and Forestry Resources	Road improvement would occur on current County easements, and not on BLM land.	Road improvement would be limited to the existing easements, and would be in conformance with the conditions and limitations of those easements. The activity would not have any impacts on adjacent lands outside of the easements.	None.
Mineral Resources	Regional description of the Project area in Section 3.11 applies to the entire access road. No other site-specific resources expected within existing roadway.	The improved roadway would not affect mineral resources. No impacts are expected.	None.
Noise	Regional description of the Project area in Section 3.12 applies to the entire access road. Access road may pass closer to locations of residents than the Project itself.	Maximum noise levels from a roller, the noisiest equipment that would be used, would be about 80 dBA at 50 feet (FHWA 2008). The nearest structure to the road is about 800 feet from the road near Woodspur Farms. Based on a typical 6 dB attenuation per doubling of distance, the maximum level would be about 56 dBA at this distance. Riverside County Ordinance 847.1 (Riverside County 2007) sets day and night maximum sound levels at 45 dB for Rural Residential and Agricultural areas; however, it exempts the maintenance or repair of public properties from its restrictions. Since no County standards would be violated and noise from this measure would temporarily affect only one structure during a few days of construction, impacts would be less than significant.	None.

Table B-2. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Paleontological Resources	Regional description of the Project area in Section 3.13 applies to the entire access road. No other site-specific resources expected within existing roadway.	Since all road improvement activities would occur within the previously existing easement, pre-construction surveys would be required to identify any potentially impacted resources within or adjacent to the roadway, and monitoring of construction activities would be required, no impacts would occur.	Project Paleontologist (PAL-1, PAL-2), Paleontological Resources Monitoring and Mitigation Plan (APM-Paleo-2, PAL-3, PAL-5, PAL-6, and PAL-7, and training prior to ground disturbance (PAL-4).
Recreation and Public Access	Regional description of the Project area, including 16th Avenue/Seeley Avenue, in Section 3.14 applies to the entire access road. No other site-specific recreational resources expected along existing roadway.	Travel along this route would be temporarily delayed during construction. Since these impacts would be temporary, impacts would be less than significant. After construction is completed, access to public lands would improve as a result of roadway improvements.	Coordinate temporary closure of 16th Avenue/Seeley Avenue with County, local residents, and emergency services (REC-2).
Social and Economic Effects	Regional description of the Project area in Section 3.15 applies to the entire access road.	The improved roadway would not require a substantial number of workers, or works with skills that are not readily available. No impacts are expected.	None.
Special Designations	Regional description of the Project area in Section 3.16 applies to the entire access road. No other site-specific special designation areas expected along existing roadway.	The improved roadway would not affect any special designation areas. No impacts are expected.	None.

Table B-2. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Transportation and Traffic	Regional description of the Project area, including 16th Avenue/Seeley Avenue, in Section 3.17 applies to the entire access road.	Traffic on 16th Avenue/Seeley Avenue would be disrupted during construction, possibly to include temporary closure and/or detours. The Traffic Monitoring and Control Plan and Coordinated Transportation Management Plan would require coordination with the County, local users, and emergency services to minimize impacts. Any impacts are expected to be temporary and localized. This measure would reduce the traffic impacts to the intersection of State Route 78 with 16th Avenue/Seeley Avenue during Project construction, a beneficial effect of this measure.	Traffic Monitoring and Control Plan (APM-TRA-2 and TRN-1), and Coordinated Transportation Management Plan (TRN-2).
Utilities and Public Services	Regional description of the Project area in Section 3.18 applies to the entire access road. No other site-specific utilities or services expected within existing roadway.	The road improvement activity would disrupt traffic on 16th Avenue/Seeley Avenue during construction, possibly to include temporary closure and/or detours. The only potential impacts to utilities or public services may be to the use of the roadway by emergency services during construction. The Traffic Monitoring and Control Plan and Coordinated Transportation Management Plan would require coordination with the County, local users, and emergency services to minimize impacts. Any impacts are expected to be temporary and localized.	No mitigation specifically for utilities. However, the Traffic Monitoring and Control Plan (APM-TRA-2 and TRN-1) and Coordinated Transportation Management Plan (TRN-2) required for transportation and traffic impacts would also address potential impacts to emergency services.
Visual Resources	Regional description of the Project area in Section 3.19 applies to the entire access road.	The improved roadway would not affect visual resources. No impacts are expected.	Lighting Plan (VIS-1), and Site Restoration (VIS-4).

Table B-2. Impacts and Mitigation Associated with Mitigation Measure TRN-4

Resource	Affected Environment	Impacts	Applicable Mitigation
Water Resources	Regional description of the Project area in Section 3.20 applies to the entire access road. Resources expected to be limited/non-existent within the existing ROW. Specific presence of resources to be determined in pre-construction surveys (see mitigation measures)	The improved roadway would not affect groundwater resources or surface water drainage. No impacts are expected.	SWPPP (WATER-1).
Wildland Fire Ecology	Regional description of the Project area in Section 3.21 applies to the entire access road.	Since all road improvement activities would occur within the previously existing easement, there is not expected to be any increase in the potential for fire ignitions. No impacts are expected.	Fire Safety Plan (FIRE-1).

References:

FWHA, 2008. Federal Highway Administration’s Roadway Construction Noise Model (RCNM) Software Version 1.1, 12/08/2008.

Riverside County 2007. Ordinance No. 847 (As Amended Through 847.1) - An Ordinance of the County of Riverside Amending Ordinance No. 847 Regulating Noise. Amended June 19.

Urban Crossroads, 2018. Limited Decker Road Repairs and Repaving Focused Air Quality and Greenhouse Gas Memorandum. May 16.

B.18 Utilities and Public Services

No mitigation measures are recommended for impacts to utilities and public services.

B.19 Visual Resources

VIS-1: Project Design, Building and Structural Materials. Visual design elements shall be integrated into the construction plans, details, shop drawings and specifications to be submitted to BLM prior to the Notice to Proceed; these shall include, but not be limited to, grubbing and clearing, vegetation thinning and clearing, grading, reclamation, drainage, and structural plans. Visual design elements within the plans shall be measureable and monitored while under construction, while operational, and when decommissioned. A careful study of the site shall be performed to identify appropriate colors and textures for materials; both summer and winter appearance shall be considered as well as seasons of peak visitor use (September 15 to April 15). Visual design elements to be integrated into construction plans, details, shop drawings and specifications shall be based on BLM's *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*, and must at a minimum include:

1. Vegetation and ground disturbance associated with access road construction, gen-tie and distribution line installations, and the perimeter access road shall be minimized and take advantage of existing clearings wherever feasible.
2. Materials, coatings, or paints having little or no reflectivity shall be used whenever feasible.
3. Grouped structures, including the water tanks and prefabricated buildings, shall be painted the same color to reduce visual complexity and color contrast.
4. The gen-tie line shall utilize to the extent available and feasible nonspecular conductors and nonreflective coatings on insulators.
5. The choice of color treatments shall be based on the appearance at typical viewing distances and consider the entire landscape around the proposed development as it would be viewed from publically accessible locations. Appropriate colors for smooth surfaces often need to be two to three shades darker than the background color to compensate for shadows that darken most textured natural surfaces. Choice of colors shall be approved by BLM District Office.
6. A lighting plan shall be prepared that documents how lighting will be designed and installed to minimize night-sky impacts during facility construction, operations, and decommissioning. Lighting for facilities shall not exceed the minimum number of lights and brightness required for safety and security, and shall not cause excessive reflected glare. Low- pressure sodium light sources shall be used to reduce light pollution. Full cut-off luminaires shall be used to minimize uplighting. Lights should be directed downward or toward the area to be illuminated. Light fixtures shall not spill light beyond the Project boundary. Lights in highly illuminated areas that are not occupied on a continuous basis

shall have switches, timer switches, or motion detectors so that the lights operate only when the area is occupied. Where feasible, vehicle mounted lights shall be used for night maintenance activities. Wherever feasible, consistent with safety and security, lighting shall be kept off when not in use. The lighting plan shall include a process for promptly addressing and mitigating complaints about potential lighting impacts.

VIS-2: Construction Phase Visual Mitigation. A pre-construction meeting with BLM landscape architects or other designated visual/scenic resource specialists shall be held before construction begins to coordinate on the visual resources mitigation strategy and confirm the compliance- checking schedule and procedures. Final design and construction documents shall be reviewed for completeness with regard to the visual mitigation elements, assuring that requirements and commitments are adequately addressed. The construction documents shall include, but not be limited to grading, drainage, restoration plans, and must demonstrate how VRM objectives will be met, monitored, and measured for conformance.

Specific measures shall include the following:

1. The Applicant shall reduce visual impacts during construction by clearly delineating construction boundaries and minimizing areas of surface disturbance; preserving existing, native vegetation to the extent feasible; stripping, salvaging, and replacing topsoil as described in the Restoration section of the Vegetation Resources Management Plan.
2. Visual impact mitigation objectives and activities shall be discussed with equipment operators before construction activities begin.
3. Existing rocks, vegetation, and drainage patterns shall be preserved to the extent feasible.
4. Brush-beating or mowing or using protective surface matting rather than removing vegetation shall be employed where feasible.
5. Slash from vegetation removal shall be mulched and spread to cover fresh soil disturbances as part of the Restoration section of the Vegetation Resources Management Plan.
6. No paint or permanent discoloring agents shall be applied to rocks or vegetation to indicate surveyor construction activity limits.
7. All stakes and flagging shall be removed from the construction area and disposed of in an approved facility.

VIS-3: Operation and Maintenance Phase Visual Mitigation. Terms and conditions for VRM mitigation compliance shall be maintained and monitored for compliance with visual objectives, adaptive management adjustments, and modifications as necessary and approved by the BLM AO. Minimum measures are as follows:

1. The Applicant shall maintain vegetated surfaces until a self-sustaining stand of vegetation is re-established and visually adapted to the undisturbed surrounding vegetation. No new disturbance shall be created during operations without completion of a VRM analysis and approval by the AO.
2. Interim restoration shall be undertaken during the operating life of the Project as soon as possible after disturbances.

3. Painted facilities shall be kept in good repair and repainted when color fades or flakes.

VIS-4: Decommissioning and Site Restoration Plan. A Decommissioning and Site Restoration Plan, covering visual impact mitigation measures, shall be in place prior to construction, and reclamation activities shall be undertaken as soon as possible after disturbances occur and be maintained throughout the life of the Project. The following decommissioning/reclamation activities/practices shall be implemented to partially mitigate visual and other resource impacts associated with solar energy development, where feasible:

1. Pre-development visual conditions and integrity shall be reviewed, and the visual elements of form, line, color, and texture shall be restored to pre-development visual compatibility or to that of the surrounding landscape setting conditions, whichever achieves the better visual quality and most ecologically sound outcome.
2. A Decommissioning and Site Restoration Plan shall be developed, approved by the BLM, and implemented. The plan shall require that all aboveground and near-ground structures be removed. Some structures shall be removed only to a level below the ground surface that will allow reclamation/restoration.
3. Components of the gen-tie line shall be removed to a depth of three feet, and shall be removed promptly. Following decommissioning, the Applicant shall provide BLM survey data showing the locations of all below-grade components of the gen-tie line left in place. Access roads use for decommissioning of the gen-tie line shall follow the paths of the original access roads, to the extent possible.
4. Topsoil from all decommissioning activities shall be salvaged and reapplied during final reclamation. The plan shall include provisions for monitoring and determining compliance with the Project's visual mitigation and reclamation objectives.
5. Soil borrow areas, cut-and-fill slopes, berms, water bars, and other disturbed areas shall be contoured to approximate naturally occurring slopes, thereby avoiding form and line contrasts with the existing landscapes. The Applicant shall contour to a rough texture (i.e., use large rocks/boulders, grade uneven surfaces, and/or vegetation mulches/debris) in order to trap seed and to discourage off-road travel, thereby reducing associated visual impacts.
6. A combination of seeding, planting of nursery stock, transplanting of local vegetation within the proposed disturbance areas, and staging of decommissioning activities enabling direct transplanting shall be utilized. Where feasible, native vegetation shall be used for reclamation to establish a composition consistent with the form, line, color, and texture of the surrounding undisturbed landscape.
7. Stockpiled topsoil shall be reapplied to disturbed areas. Gravel and other surface treatments shall be removed or buried.
8. Rocks, brush, and vegetal debris shall be restored whenever possible to approximate pre-existing visual conditions.
9. A decommissioning VRM Monitoring and Compliance Plan shall be prepared by the Applicant and approved by the BLM prior to decommissioning activities, which

establishes the schedule and terms for monitoring and the conditions and methods of measurement for determining compliance. In review of the plan, BLM will consider the ability of the proposed activities to support BLM's Long Term Monitoring Strategy for the Riverside East SEZ (BLM 2016).

10. Monitoring for appearance, function, wildlife usage, and general compliance with the restoration provisions of this plan shall be conducted twice annually for 5 years and may be extended for an additional 5 years if the performance standards have not been achieved.
11. A survey of the reclamation areas shall be conducted in the spring of each year. Qualitative data will be collected on vegetation cover, species composition, appearance, and function of the plant community. In addition to qualitative data, quantitative data on vegetation cover and species composition will be collected by using ocular estimates or transects within the reclamation areas. The data collected will be compared against similar data collected within the reference site (i.e., associated undisturbed areas immediately adjacent to the Project site) or pre-disturbance conditions within the Project site.

B.20 Water Resources

WATER-1: Implementation of a SWPPP. To ensure that stormwater quality is protected during the construction and decommissioning period for the DQSP, as well as any ground disturbance (greater than one acre) maintenance done during the operational period, the Applicant shall comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance (Order No. 2009-0009-DWQ) (Construction General Permit), as applicable. Compliance with the Construction General Permit will ensure that the proposed construction activities would include BMPs to manage stormwater and control sediment and other pollutants from leaving the Project construction site. Compliance with the Construction General Permit, if applicable will require completion and implementation of a SWPPP for the DQSP site that shall be in effect during all construction, maintenance, and decommissioning activities for the solar field, the gen-tie line, and all associated facilities. The SWPPP shall identify pollutant sources that may affect the quality of stormwater discharge and shall require the implementation of BMPs to reduce pollutants in storm water discharges.

BMPs may include, but would not be limited to:

1. Stockpiles of loose material shall be covered or otherwise stabilized and runoff diverted away from exposed soil material.
2. To minimize discharge of sediment during storm events, temporary erosion control measures (such as fiber rolls, staked straw bales, detention basins, check dams, geofabric, sandbag dikes, check dams, erosion control blankets, matting, and other fabrics or other ground cover as available) shall be implemented and remain in place until surface sediments can be stabilized.

3. Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.
4. No disturbed surfaces may be left without erosion control measures in place during the rainy season.
5. Erosion protection shall be provided on all cut-and-fill slopes, and shall be initiated as soon as possible after completion of grading and prior to the onset of the rainy season.
6. Hazardous materials such as fuels and solvents used on the construction sites shall be stored in covered containers and protected from rainfall, runoff, vandalism, and accidental release to the environment. All stored fuels and solvents shall be contained in an area of impervious surface with containment capacity equal to or greater than the volume of materials stored. Spill cleanup materials shall be readily available at all construction sites. Employees shall be trained in spill prevention and cleanup, and individuals shall be designated as responsible for prevention and cleanup activities.
7. Equipment shall be properly maintained in designated areas with runoff and erosion control measures to minimize accidental release of pollutants.
8. Impervious surface areas shall be graded or constructed to drain to a filtration BMP or equally effective alternative.

Storage of gasoline and diesel fuel tanks, and all refueling and maintenance of vehicles and equipment, shall occur within a designated area with proper secondary containment. The area shall not be within 100 feet of a wetland, water body, or water supply well. The applicant would report any hazardous materials release to the BLM authorized officer within 24 hours of release.

WATER-2 Comprehensive Drainage, Stormwater, and Sedimentation Control Plan. Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall develop and implement a Comprehensive Drainage, Stormwater, and Sedimentation Control Plan prior to the initiation of construction (or decommissioning as relevant). The objective of the Plan shall be to avoid changes in onsite stormwater flow that could damage Project components, and to minimize changes in stormwater flow downstream of the facility that could impact offsite structures, biological resources, or cultural resources.

If required by the Comprehensive Drainage, Stormwater, and Sedimentation Control Plan, additional stormwater retention measures and facilities, including but not limited to retention basins and other facilities or features designed to retain stormwater on site, shall be implemented within the DQSP site. Stormwater retention facilities shall be designed to accommodate increases in flows that would be generated as a result of DQSP implementation, in comparison to existing conditions, such that DQSP implementation would not result in a net increase in discharge from the site under either a 10-year or 100-year storm event.

The use of flow-obstructing fencing shall be avoided in active drainages; instead, fencing that allows for the passage of water while minimizing buildup of debris shall be utilized on site, and breakaway fencing shall be used for drainage crossings. Stormwater flows emanating from proposed impervious surfaces shall be retained onsite and/or directed into channels and other stormwater infrastructure, and shall be sized such that unintentional ponding, flooding, erosion, or sedimentation would not occur onsite or downstream. Additionally, at-grade road crossings shall be used, where possible, and necessary crossings shall be designed to provide adequate flow-through capacity during storm events, up to the 100-year event. In order to minimize disturbance to existing floodplains and natural channels, final facility designs shall be employed which minimize, to the extent practicable, the footprints of roads, parking lots, and other proposed facilities.

The Plan shall include an adaptive management plan to monitor system performance and make adjustments to the design if the system is determined to be inadequate.

WATER-3: Flood Protection. In order to ensure that proposed onsite buildings and staff therein are protected from flooding, all onsite buildings and fill areas shall be placed outside of frequent flood flow areas. Additionally, proposed on-site buildings, maintenance areas, designated parking lots, and associated facilities shall be constructed in accordance with local flood control standards or as recommended by the geotechnical engineer. Slope protection shall be provided for all fill areas exposed to erosive flows. In specific areas where frequent flows are anticipated, posts for solar panels shall be constructed on a deepened footing, as recommended by the geotechnical engineer, in order to withstand anticipated scouring.

The Applicant shall ensure that during construction, temporary construction related structures such as bridges, roads, berms, and other facilities would be constructed so as to avoid interference with 100-year flood flows. Temporary installation of the following types of facilities shall be avoided: temporary elevated earthen structures such as roads and berms; earthen bridges or other structures within a waterway or flood conveyance that could interfere with flood flows; dams; unnecessary ditches; and other major structures that could concentrate flood flows. Additionally, to the extent practicable, the Applicant shall ensure that the construction process proceeds in a manner so as to minimize exposure of facilities to construction period flooding. Temporary ditches and trenches (such as for pipes, wires, or other infrastructure) shall be completed and backfilled as quickly as possible, and shall not be left open for extended periods. Drainage infrastructure shall be installed prior to installation of the solar arrays and other facilities on site. Other facilities that may be susceptible to flood damage during construction shall be managed so as to minimize construction time of those facilities. Prior to initiation of DQSP operation, the Applicant shall develop and implement a Flood Safety Plan for the site. The Flood Safety Plan shall delineate specific actions to be completed during a flood event, in order to protect workers and facilities as relevant. The Plan shall identify refuge areas that would not be susceptible to 100-year flooding, and provide requirements and guidance with respect to avoiding injury, death, or equipment damage during a flood event. The Plan shall be adhered to and updated, as needed, during the entire operation period of the DQSP.

WATER-4: Groundwater Monitoring and Mitigation Plan. If the Applicant chooses to install groundwater production wells, a Groundwater Monitoring and Mitigation Plan shall be developed and implemented prior to construction. The Groundwater Monitoring and Mitigation Plan shall be prepared by a qualified hydrogeologist registered in the State of California and submitted by the Applicant to the BLM and County for approval.

The Groundwater Monitoring and Mitigation Plan shall be based on a numerical groundwater model acceptable to the BLM and shall provide detailed methodology for monitoring background and onsite groundwater levels, water quality, and flow rates, including installation of flow meters. The Plan shall include installation of one or more monitoring wells in which the effect of groundwater withdrawal on groundwater levels can be monitored through periodic water level measurements. Monitoring shall be performed prior to construction to establish pre-construction groundwater level and water quality that can be used as a baseline against which later measurements can be compared, and to establish trigger points that would be used to determine the need for additional monitoring, investigation, and/or mitigation.

All production wells shall be metered, and the meters shall be tamper-proof and certified. Monitoring will be monthly. If a trigger point is reached, the Applicant shall notify BLM within 7 days, and shall increase the frequency of monitoring to weekly. If trigger point exceedances continue for 3 successive readings, Applicant shall meet with the BLM to re-evaluate operating conditions, which could include additional monitoring, investigation, or mitigation, and/or cessation of pumping.

The Groundwater Monitoring and Mitigation Plan shall include a schedule for submittal of monthly data reports by the Applicant to the BLM and County, for the duration of the monitoring period. These data reports shall be prepared and submitted to the BLM and County for review and approval, and shall include water level monitoring data (trend analyses) from all production and monitoring wells. Based on the results of the reports, the Applicant, the BLM, and the County shall determine if the Project's pumping activities have resulted in water level decline in the baseline at any of the monitoring wells, including nearby private wells, if any. If drawdown exceeds the established trigger levels, the Applicant shall immediately reduce groundwater pumping until water levels stabilize or recover to a reasonable level.

The Groundwater Monitoring and Mitigation Plan shall also include a schedule for submittal of annual data reports by the Applicant to the BLM and County for the first 5 years of the Project (including the construction period). These annual data reports shall be prepared and submitted to the BLM and County for review and approval, and shall include at a minimum the following information:

1. Daily usage, monthly range, and monthly average of daily water usage in gallons per day;
2. Total water used on a monthly and annual basis in acre-feet; summary of all water level data and water quality data;
3. Identification of trends that indicate potential for offsite wells to experience decline of water level; and
4. Identification of all sources of water by type (i.e., groundwater, surface water, municipal water) and well/location used on BLM land.

Upon receipt of each annual data report, the BLM and County shall determine whether groundwater wells surrounding the Project site and Project supply well(s) are influenced by Project activities in a way that requires additional mitigation and, if so, shall determine what measures are needed. After the first 5 years of the Project, the Applicant, the BLM, and the

County shall jointly evaluate the effectiveness of the Groundwater Monitoring and Mitigation Plan and determine if monitoring frequencies or procedures should be revised or eliminated.

WATER-5: Mitigation of Impacts to the Palo Verde Mesa Groundwater Basin

The Project Owner must develop a Colorado River Water Supply Plan (Plan) to prevent, replace or mitigate project impacts that deplete the PVMGB groundwater budget. The amount of PVMGB depletion requiring mitigation shall be equal to the amount of withdrawals from below the Colorado River Accounting Surface as determined by the Groundwater Monitoring and Mitigation Plan (WATER-4). The Plan must identify measures that will be taken to replace water on an acre-foot to acre-foot basis, if the project results in consumption of any water from within or below (+/-0.84 feet (the 95-percent confidence level of the surface) the Colorado River Accounting Surface, towards the purpose of ensuring that no allocated water from the Colorado River is consumed without entitlement to that water. The analysis must be submitted to the BLM and Colorado River Basin Regional Water Quality Control Board for review and approval, and to the Metropolitan Water District of Southern California for review and comment, prior to the use of any water below the accounting surface.

The plan is required at any time that the BLM and/or the Project Owner determine, based on the results of the Groundwater Monitoring and Mitigation Plan (WATER-4), that groundwater withdrawals will likely reach the Accounting Surface during the life of the project. Should an approved plan for mitigation or replacement not be in place at the time groundwater withdrawals reach the Accounting Surface, all groundwater pumping shall cease until a mitigation and replacement plan is approved.

The Plan must describe groundwater monitoring activities and quarterly data reports for review of depth to groundwater information, and proximity of the depth of project related groundwater pumping to the Colorado River Accounting Surface. The Plan must further describe that if project-related groundwater pumping draws water from below the accounting surface the following must occur:

1. Based on groundwater monitoring data, record the quantity of groundwater pumped from below the Accounting Surface , and

2. The Project Owner must implement water conservation/offset activities to replace Colorado River water on an acre-foot by acre-foot basis.

To effectively implement item (2) above, the Plan shall include the following information:

- Identification of water conservation/offset activities to replace the quantity of water diverted from the Colorado River;
- Identification of any required permits or approvals and compliance of conservation/offset activities with CEQA and NEPA;
- An estimated schedule of completion for each identified activity;
- Performance measures used to evaluate the amount of water replaced by each identified activity; and

- Monitoring and reporting protocol to ensure effective implementation of water conservation/offset activities and achievement of the intended purpose of replacing Colorado River water diversions.

The Project Owner must collaborate with the BLM, the Colorado River RWQCB, and/or the MWD, as appropriate, in order to identify acceptable water conservation/offset activities for the purposes of the Plan, with acceptable activities being those that are considered environmentally, physically, and economically feasible, while also effectively resulting in the replacement of Colorado River water. Water conservation/offset activities that have been considered and determined to not be viable and therefore may not be identified in the Plan include the following:

- Irrigation improvements in the Palo Verde Irrigation District (water unused by the PVID becomes available to MWD per the 2003 Colorado River Water Delivery Agreement executed by MWD, the Secretary of the Interior, Imperial Irrigation District, Coachella Valley Water District, and San Diego County Water Authority);
- Purchase of water allotments allocated by the Department of the Interior (all Colorado River water available to California in shortage, normal, or Intentionally Created Surplus conditions is already allocated and its use is limited to each entity's service area under executed water delivery contracts);
- Implementation of conservation programs in floodplain communities (all water unused by holders of higher priorities becomes available to MWD per the water delivery contracts executed by the Department of the Interior); and
- Participation in the BLM's Tamarisk Removal Program (use of Colorado River water by phreatophytes such as tamarisk is not charged as a use of water for U.S. Supreme Court Decree accounting purposes by the U.S. Bureau of Reclamation).

If the Project Owner has filed an application to the U.S. Bureau of Reclamation (USBR) to obtain an allocation of water from the Colorado River and such allocation is granted, it may be used to satisfy some or all the water conservation offsets on an acre-foot per acre-foot basis. However, the filing of an application for allocation of Colorado River water does not guarantee issuance of such an allocation. In addition, the Department of the Interior has already allocated all of California's apportionment to use of Colorado River water during shortage, normal, and Intentionally Created Surplus conditions. Therefore, unless the Project Owner currently holds entitlement to the use of Colorado River water, an allocation is not assumed to be granted.

If the project does not result in diversion of Colorado River water (via pumping from near (within +/-0.84 feet at the 95-percent confidence level of the accounting surface), implementation of water conservation/offset activities identified in the Colorado River Water Supply Plan is not necessary. However, groundwater pumping below the Colorado River Accounting Surface is prohibited without an approved Plan in place.

B.21 Wildland Fire Ecology

The following Project-specific mitigation measures were developed to reduce and/or avoid potential impacts associated with wildland fire associated with the Project and alternatives.

FIRE-1: Fire Safety Plan. Prior to the start of ground disturbance and issuance of a County grading permit, the Applicant shall prepare and implement a Fire Safety Plan to ensure the safety of workers and the public during Project construction, operation and maintenance, and decommissioning activities. This plan shall complement or supplement provisions of the Applicant's proposed Hazardous Materials Management and Emergency Response Plan. The Fire Safety Plan shall be provided to the BLM and RCFD for approval before the Applicant receives a Notice to Proceed (NTP). The Fire Safety Plan shall include, but not be limited to, the following elements:

1. All internal combustion engines used at the Project site shall be equipped with spark arrestors. Spark arrestors shall be in good working order.
2. Once initial two-track roads have been cut and initial fencing completed, light trucks and cars shall be used only on roads where the roadway is cleared of vegetation. Mufflers on all cars and light trucks shall be maintained in good working order.
3. Fire rules shall be posted on the Project bulletin board at the contractor's field office and areas visible to employees.
4. Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials.
5. The Applicant shall make an effort to restrict use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to outside of the official fire season. When the above tools are used, water tanks equipped with hoses shall easily accessible to personnel.
6. Smoking shall be prohibited in wildland areas and within 50 feet of combustible materials storage, and shall be limited to paved areas or areas cleared of all vegetation.
7. Each Project construction site (if construction occurs simultaneously at various locations) and the proposed solar plant site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires.
8. The Applicant shall coordinate with the RCFD to create a training component for emergency first responders to prepare for specialized emergency incidents that may occur at the Project site.
9. Construction workers, plant personnel, and maintenance workers at the plant and/or transmission lines to perform maintenance activities shall receive training on the proper use of fire-fighting equipment and procedures to be followed in the event of a fire. Training records shall be maintained and be available for review by the RCFD.
10. Vegetation near all solar panel arrays, ancillary equipment, and access roads shall be controlled through periodic cutting and spraying of weeds, in accordance with the VRMP.
11. The BLM and RCFD shall be consulted during plan preparation and fire safety measures recommended by the agencies included.

12. The plan shall list fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations.
13. Operations employees shall participate in annual fire prevention and response training exercises with the RCFD
14. The Applicant shall designate an emergency services coordinator from among the full-time on-site employees who shall perform routine patrols of the site during the fire season equipped with a portable fire extinguisher and communications equipment. The Applicant shall notify the BLM and County of the name and contact information of the current emergency services coordinator in the event of any change.
15. Remote monitoring of all major electrical equipment (transformers and inverters) will screen for unusual operating conditions. Higher than nominal temperatures, for example, can be compared with other operational factors to indicate the potential for overheating which under certain conditions could precipitate a fire. Units could then be shut down or generation curtailed remotely until corrective actions are taken.
16. Fires ignited onsite shall be immediately reported to BLM FIRE and the RCFD.

The engineering, procurement, and construction contract(s) for the proposed Project shall clearly state the requirements of this mitigation measure.

B.22 Summary

Table B-2 describes the timing, responsible agency, and methods for verification of each mitigation measure.

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
AQ-1	Dust Control Plan	Plan to be reviewed and approved by BLM, the County, and MDAQMD.	Plan to be submitted no less than 60 days prior to start of construction. Plan implementation to be ongoing throughout construction activities.	BLM land and 160-acre private parcel	BLM, Riverside County, and MDAQMD
AQ-2	Protect the Stability of Desert Pavement Areas	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM and Riverside County
AQ-3	Construction Emissions Reduction	Inventory of equipment and DOORS registration.	Ongoing throughout construction activities	BLM land and 160-acre private parcel	BLM, Riverside County, and CARB
VEG-1	Qualifications of Designated Biologist(s)	Proposed staff to be reviewed and approved by BLM and the County.	Prior to the start of ground disturbance and issuance of a County grading permit.	BLM land and 160-acre private parcel	BLM and Riverside County
VEG-2	Duties of the Designated Biologist(s)	Ongoing communication with BLM, CDFW, and USFWS.	Ongoing throughout construction activities	BLM land and 160-acre private parcel	BLM, Riverside County, USFWS, and CDFW
VEG-3	Identification of Biological Monitors	Proposed staff to be reviewed and approved by BLM and the County.	Prior to the start of ground disturbance and issuance of a County grading permit.	BLM land and 160-acre private parcel	BLM and Riverside County

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
VEG-4	Duties of Biological Monitors	Ongoing communication with the Designated Biologist, who shall report to BLM, CDFW, and USFWS.	Ongoing throughout construction activities	BLM land and 160-acre private parcel	BLM and Riverside County
VEG-5	Authority of the Designated Biologist(s) and Biological Monitors	Ongoing communication with the Designated Biologist, who shall report to BLM, CDFW, and USFWS.	Ongoing throughout construction activities	BLM land and 160-acre private parcel	BLM and Riverside County
VEG-6	Worker Environmental Awareness Program	Program to be reviewed and approved by BLM and the County.	Ongoing throughout construction, operations, and decommissioning	BLM land and 160-acre private parcel	BLM and Riverside County
VEG-7	Biological Resources Mitigation Implementation and Monitoring Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM and Riverside County
VEG-8	Avoidance of Biological Resources During Construction	Specific plans (Nesting Bird Monitoring and Management, Restoration) to be reviewed and approved by BLM. Other activities to be verified through various reporting mechanisms to BLM.	Disturbance limits to be established prior to start of construction. Plan implementation to be ongoing throughout construction, operations, and decommissioning. Restoration to occur within 30 days following completion of construction.	BLM land and 160-acre private parcel	BLM and Riverside County

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
VEG-9	Special-Status Plant Species Impact Avoidance and Minimization, and Compensation	Plan to be reviewed and approved by BLM and the County. Compensation to be verified through BLM approval of compensation type and amount.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning. Compensation to be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM land and 160-acre private parcel	BLM and Riverside County.
VEG-10	Mitigation for Impacts to Sensitive Riparian Habitat and State Waters	Compensation to be verified through CDFW approval of compensation type and amount.	Compensation to be completed within 18 months after the start of ground disturbance.	BLM land and 160-acre private parcel	CDFW
VEG-11	Project Phasing	Mitigation activities for each phase to be verified by the agency responsible for that activity.	Construction schedule and plans to be submitted prior to initiating each phase of construction.	BLM land and 160-acre private parcel	BLM and Riverside County
VEG-12	Monitoring and Research	BLM to verify they are granted access, as required.	Ongoing throughout construction, operations, and decommissioning	BLM land only	BLM

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
WIL-1	Measures to Avoid Take of Mojave Desert Tortoise	Plans and specifications to be reviewed and approved by BLM and USFWS. Implementation of plans and specifications to be verified through compliance reports submitted to BLM and USFWS.	Surveys and fencing to be completed prior to start of construction. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM, Riverside County, and USFWS
WIL-2	Mojave Desert Tortoise Translocation Plan	Plan to be reviewed and approved by BLM and USFWS.	Plan to be submitted and tortoises translocated prior to start of ground disturbance.	BLM land and 160-acre private parcel	BLM, Riverside County, and USFWS
WIL-3	Project Notifications and Reporting	BLM to have access to verify compliance. Applicant to perform required inspections and submit to BLM, CDFW, and/or USFWS as specified.	Ongoing throughout construction, operations, and decommissioning	BLM land and 160-acre private parcel	BLM, Riverside County, USFWS, and CDFW
WIL-4	Compensatory Mitigation for Desert Tortoise Habitat Losses	Compensation to be verified through BLM approval of compensation type and amount.	Compensation to be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM land only	BLM

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
WIL-5	Predator Management Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM and Riverside County
WIL-6	Bird and Bat Conservation Strategy	BBCS to be reviewed and approved by BLM, the County, USFWS, and CDFW.	BBCS to be submitted prior to the Notice to Proceed. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM, Riverside County, USFWS, and CDFW
WIL-7	Pre-Construction Nest Surveys	Survey results to be submitted to BLM.	Surveys to be completed prior to start of ground disturbance, including grading or mowing.	BLM land and 160-acre private parcel	BLM and Riverside County
WIL-8	American Badger and Desert Kit Fox Protection	Plan to be reviewed and approved by BLM, USFWS, and CDFW.	Plan to be submitted at least 45 days prior to start of construction. Surveys to be completed no more than 30 days prior to start of construction.	BLM land and 160-acre private parcel	BLM, Riverside County, USFWS, and CDFW
WIL-9	Burrowing Owl Protection and Mitigation	Plan to be reviewed and approved by BLM, USFWS, and CDFW.	Surveys to be completed no more than 30 days and no less than 14 days prior to start of construction. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM land and 160-acre private parcel	BLM, Riverside County, USFWS, and CDFW.

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
WIL-10	Compensatory Mitigation for Mojave Fringe-toed Lizard Habitat Losses	Compensation to be verified through BLM approval of compensation type and amount.	Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM land only	BLM
WIL-11	In-Lieu Fees to Satisfy Compensation Requirements	Compensation to be verified through BLM approval of compensation type and amount.	Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer.	BLM land only	BLM
WIL-12	Couch's Spadefoot Toad Protection and Mitigation	Plan to be reviewed and approved by BLM and CDFW.	Plan to be submitted prior to start of ground disturbance. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM, Riverside County, and CDFW
WIL-13	Development of Ponding Area	BLM to approve any proposed ponds.	Approvals to be received before any ponds are developed.	BLM land and 160-acre private parcel	BLM
CULTURAL-1	Monitoring and Discovery Plan	Plan to be reviewed and approved by BLM.	Plan to be submitted to and approved by the BLM prior to start of ground disturbance. Plan to be implemented throughout construction.	BLM land and 160-acre private parcel	BLM

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
CULTURAL-2	Long-Term Management Plan (LTMP)	Plan to be reviewed and approved by BLM.	Plan to be submitted to and approved by BLM prior to start of ground disturbance and issuance of County grading permit. Plan to be implemented throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM
CULTURAL-3	Identification of Human Remains	Incidents to be immediately reported to County Coroner and BLM. Procedures for addressing discovery and handling of NAGPRA items detailed in the MDP required under CULTURAL-1 and Long-Term Management Plan (LTMP) required in CULTURAL-3.	To be implemented throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM
CULTURAL-4	Unanticipated Discoveries	Incidents to be immediately reported to BLM.	To be implemented throughout construction, operations, and decommissioning.	BLM land only and 160-acre private parcel	Project Archaeologist and BLM
CULTURAL-5	Geoarchaeological Testing in support of Monitoring and Discovery Plan	Testing fieldwork to be reviewed and approved by BLM for BLM administered lands.	Proposal to conduct testing fieldwork to be submitted to and approved by BLM in time to be incorporated into the MDP required under CULTURAL-1.	BLM land and 160-acre private parcel	BLM
CULTURAL-6	Native American Tribal Participant	Documentation of efforts to retain the Native American Tribal Participants to be submitted to BLM.	To be submitted to BLM at with MDP (required under CULTURAL-1) prior to ground disturbance.	BLM land and 160-acre private parcel	BLM,

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
CULTURAL-7	Cultural Resources Monitoring Report	Monitoring and other cultural resource reports to be submitted to BLM as necessary, as set forth in the BLM-approved MDP required under CULTURAL-1 and the BLM-approved LTMP required under CULTURL-2.	To be implemented throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM
CULTURAL-8	Worker Environmental Awareness Program	Program to be reviewed and approved by BLM.	Program to be submitted to and approved by BLM prior to start of ground disturbance and issuance of County grading permit. Program to be implemented throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM
GEO-1	Conduct geotechnical studies to assess soil characteristics and aid in appropriate foundation design	Study results and proposed solutions to be submitted to BLM and the County Engineering Geologist.	60 days before final Project design.	BLM land and 160-acre private parcel	BLM and Riverside County
GHG-1	Seal Circuit Breakers	Owners of gas-insulated switchgear required to report emissions annually to CARB.	Annually.	BLM land and 160-acre private parcel	CARB

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
HAZ-1	Site-Specific Hazardous Materials Management and Emergency Response Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to Notice to Proceed. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM and Riverside County
HAZ-2	Broken PV Module Detection and Handling	Disposal of California-state hazardous waste, if any, is regulated by DTSC.	Ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	DTSC
HAZ-3	Aircraft Safety Consultation	Verified by filing of FAA Forms 7460-1.	At least 45 days prior to the start of construction.	BLM land and 160-acre private parcel	FAA
UXO-1	UXO Identification, Training, and Reporting Plan	Plan to be reviewed and approved by BLM and Riverside County.	Plan to be submitted at least 30 days prior to the start of construction, and within 30 days of the completion of surveys. Plan implementation to be ongoing throughout construction.	BLM land and 160-acre private parcel	BLM and Riverside County
TLSN-1	Radio Frequency Interference	Records of complaints to be submitted to BLM and Riverside County upon request.	Ongoing throughout operations.	BLM land and 160-acre private parcel	BLM and Riverside County
NOISE-1	Noise Level Monitoring	Results of noise level monitoring to be submitted to BLM and the County.	Ongoing throughout construction activities	BLM land and 160-acre private parcel	BLM and Riverside County
PAL-1	Project Paleontologist	Proposed staff to be reviewed and approved by BLM and the County.	Prior to the issuance of a Notice to Proceed.	BLM land and 160-acre private parcel	BLM and Riverside County

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
PAL-2	Materials for Project Paleontologist and BLM Authorized Officer	Materials to be provided to BLM and Riverside County.	Prior to the start of each phase of construction.	BLM land and 160-acre private parcel	BLM and Riverside County
PAL-3	Paleontological Resources Monitoring and Mitigation Plan (PRMMP)	Plan to be reviewed and approved by BLM and Riverside County.	Plan to be submitted prior to Notice to Proceed. Plan implementation to be ongoing throughout construction and any other ground disturbance.	BLM land and 160-acre private parcel	BLM and Riverside County
PAL-4	Approved Training Pertaining to Ground Disturbance	Training materials to be provided to BLM and Riverside County for approval.	Materials to be submitted prior to start of ground disturbance. Training to be implemented throughout construction and any other ground disturbance.	BLM land and 160-acre private parcel	BLM and Riverside County
PAL-5	Paleontological Monitoring Activities	Activities to be verified through daily log and monthly compliance report.	Throughout construction and any other ground disturbance. Activities to be verified through daily log and monthly compliance report.	BLM land and 160-acre private parcel	BLM and Riverside County
PAL-6	Implementation of PRMMP	Activities to be verified through daily log and monthly compliance report.	Throughout construction and any other ground disturbance. Activities to be verified through daily log and monthly compliance report.	BLM land and 160-acre private parcel	BLM and Riverside County
PAL-7	Paleontological Resources Report (PRR)	Report to be submitted to BLM and the County.	Within 30 days following completion of ground-disturbing activities	BLM land and 160-acre private parcel	BLM and Riverside County
REC-1	Access to Mule Mountains ACEC	Draft interpretive materials to be submitted to BLM for review and approval.	Prior to Project construction, and then periodically throughout the duration of the Project.	BLM land only	BLM

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
REC-2	Temporary Route Closure	Documentation of coordination efforts to be submitted to BLM and other affected agencies.	No less than 60 days prior to construction and maintenance of the gen-tie line. Documentation to be provided at least 30 days prior to construction.	BLM land only	BLM
REC-3	Use of Long-Term Visitor Areas (LTVAs)	Specific authorization from BLM to be sought for use of the LTVAs.	Prior to use of LTVAs.	BLM land only	BLM
TRN-1	Traffic Monitoring and Control Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction.	BLM land and 160-acre private parcel	BLM and Riverside County
TRN-2	Coordinated Transportation Management Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of construction. Plan implementation to be ongoing throughout construction.	BLM land and 160-acre private parcel	BLM and Riverside County
TRN-3	Reduce Construction Worker Vehicles	Revised traffic analysis to be submitted to BLM and the County for review and approval.	Analysis to be submitted prior to the Notice to Proceed. Results of analysis to be implemented throughout construction.	BLM land and 160-acre private parcel	BLM and Riverside County
TRN-4	Improve Access Road	Grading Plan to be reviewed and approved by County transportation department.	Prior to construction of the Project fence, solar facility, gen-tie, temporary construction areas, and other facilities.	Access road under County easement only.	Riverside County

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
VIS-1	Project Design, Building and Structural Materials	Project designs, specifications, and Lighting Plan to be submitted to BLM District Office for review and approval.	Construction plans, details, shop drawings and specifications to be submitted to BLM prior to the Notice to Proceed.	BLM land and 160-acre private parcel	BLM and Riverside County
VIS-2	Construction Phase Visual Mitigation	Measures to be established in pre-construction meeting with BLM landscape architects or other designated visual/scenic resource specialists.	Ongoing throughout construction activities	BLM land and 160-acre private parcel	BLM and Riverside County
VIS-3	Operation and Maintenance Phase Visual Mitigation	Objectives, adaptive management adjustments, and modifications to be reviewed and approved by BLM and Riverside County.	Ongoing throughout operations	BLM land and 160-acre private parcel	BLM and Riverside County
VIS-4	Decommissioning and Site Restoration Plan	Plan to be reviewed and approved by BLM and Riverside County.	Plan to be submitted prior to start of construction. Plan implementation to be undertaken as soon as possible after disturbances occur. Monitoring to be conducted twice annually for 5 years and may be extended for an additional 5 years if the performance standards have not been achieved	BLM land and 160-acre private parcel	BLM and Riverside County

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
WATER-1	Implementation of a SWPPP	Plan to be reviewed and approved by BLM and Riverside County.	Ongoing throughout construction, decommissioning, and any other ground disturbance greater than one acre.	BLM land and 160-acre private parcel	BLM
WATER-2	Comprehensive Drainage, Stormwater, and Sedimentation Control Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction and decommissioning.	BLM land and 160-acre private parcel	BLM and Riverside County
WATER-3	Flood Protection	Grading Plan and Flood Safety Plan to be submitted to BLM and County for review and approval.	Plans to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM and Riverside County
WATER-4	Groundwater Monitoring and Mitigation Plan	Plan to be reviewed and approved by BLM and the County.	Plan to be submitted prior to start of construction. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM and Riverside County

Table B-2. Mitigation Monitoring and Reporting Program

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
WATER-5	Mitigation of Impacts to the Palo Verde Mesa Groundwater Basin	Plan to be reviewed and approved by BLM, the County, and Colorado River Basin Regional Water Quality Control Board. Plan to be reviewed by the Metropolitan Water District of Southern California.	Prior to the use of any water below the accounting surface	BLM land and 160-acre private parcel	BLM, Riverside County, and Colorado River Basin Regional Water Quality Control Board.
FIRE-1	Fire Safety Plan	Plan to be reviewed and approved by BLM and the RCFD.	Plans to be submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM and RCFD

Appendix C: Protest Resolution

Bureau of Land Management Director's Summary Protest Resolution Report

Desert Quartzite Solar Project Final Plan Amendment/Environmental Impact Statement/ Environmental Impact Report

January 9, 2020

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Acronyms

Term	definition
ACEC	Area of Critical Environmental Concern
ARPA	Archaeological Resources Protection Act
BLM	Bureau of Land Management
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CMA	Conservation and Management Action
CRIT	Colorado River Indian Tribes
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
DQSP	Desert Quartzite Solar Project
DRECP	Desert Renewable Energy Conservation Plan
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FEIS/EIR	Final Environmental Impact Statement/Environmental Impact Report
FLPMA	Federal Land Policy and Management Act
HPTP	Historic Properties Treatment Plan
KOP	key observation point
LUP	land use plan
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
PA	Plan Amendment
ROW	right-of-way
SEZ	solar energy zone
SHPO	State Historic Preservation Officer
VRM	Visual Resource Management

Protesting Party Index

Protester	Organization	Determination
Sara Clark	Colorado River Indian Tribes (CRIT)	Denied – Issues and Comments
Kevin Emmerich	Basin and Range Watch	Denied – Issues and Comments

NEPA – Range of Alternatives

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: All of the alternatives considered in the FEIS/EIR are located close to the Mule Mountains. This is extremely concerning for the Tribes, given the Project's potential to remove, damage, and destroy cultural resources and artifacts within the Mule Mountains and the surrounding area and the Project's known indirect impacts to this critical cultural landscape. The agencies have failed to justify or explain why a reduced acreage alternative located further from the Mule Mountains was not considered. Thus, in compliance with NEPA's and CEQA's requirements to consider a reasonable range of alternatives that would reduce significant environmental impacts, FEIS/EIR should be revised to include a reduced project alternative located further from the Mule Mountains in order to reduce cultural resources impacts.

Summary:

The Bureau of Land Management (BLM) failed to provide an adequate range of alternatives. The BLM should have considered an alternative with a smaller footprint located farther from the Mule Mountains.

Response:

The BLM must analyze a range of reasonable alternatives, but is not required to consider every possible alternative to a proposed action: "In determining the alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of implementing an alternative. 'Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.'" BLM National Environmental Policy Act (NEPA) Handbook, H-1790-1, at 50 (citing Question 2a, Council on Environmental Quality [CEQ], Forty Most Asked Questions Concerning CEQ's NEPA Regulations, March 23, 1981); see also 40 Code of Federal Regulations (CFR) § 1502.14.

The Desert Quartzite Solar Project (DQSP) Plan Amendment (PA)/Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) noted that the BLM did consider other siting locations in development of the alternatives, but these alternatives were eliminated from further review; the rationale for elimination is presented in Section 2.9.1, *Rationale for Eliminating Alternatives* (p. 2-39). Here, the BLM describes its methodology for eliminating alternatives. Furthermore, in Section 2.9.2, the BLM notes the rationale for why different siting options were eliminated. The EIS/EIR notes that the BLM had determined through previous land use planning efforts (i.e., the Western Solar Plan and the Desert Renewable Energy Conservation Plan [DRECP]) that the DQSP site is suitable for solar development. "The Western Solar Plan identified specific locations that, at a plan level, appear well-suited for utility-scale production of solar energy where the BLM would prioritize development (i.e., solar energy zones or SEZs) as well as categories of lands to be excluded from such development. The area of the DQSP was designated as the Riverside East SEZ, signifying that the DQSP site and the surrounding area are preferred for large-scale solar energy development based on environmental and technical suitability for such development" (p. 2-43).

Furthermore, through the Western Solar Plan, BLM already considered whether other locations on public lands might be suitable for solar development and, after years of review, determined that the Riverside East SEZ, encompassing the proposed DQSP, contained areas most suitable for solar development. Similarly, the DRECP considered technical suitability and resource impacts in implementing new land use allocations for resource protection and for the focus of renewable energy development, and recognized the area of the DQSP site as suitable for solar development by designating it as a Development Focus Area (p. 2-43).

As a result of the technical, procedural, and environmental constraints discussed in the EIS/EIR in Section 2.9.2, timely development of the Project on other lands administered by the BLM would not be feasible, and is likely to be inconsistent with the basic policy objectives for management of areas outside of the proposed Development Focus Areas (p. 2-43). In regard to considering an alternative farther away from the Mule Mountains, the BLM considered a range of reasonable alternatives in the DQSP PA/EIS/EIR in full compliance with NEPA.

Consultation and Coordination

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: The FEIS/EIR must be revised to discuss the consultation with CDFW and compliance with its requirements, as well as those of any other local, state, or federal agency with jurisdiction over the Project. Unfortunately, the agencies have failed to complete this consultation, or include discussion of any consultation in the FEIS/EIR, before the final environmental review document was issued so that decisionmakers and the public are fully informed of Project impacts. Until it does so, the FEIS/EIR's conclusions that biological impacts will be less than significant are unsupported.

Summary:

The BLM failed to consult with the California Department of Fish and Wildlife (CDFW) and other local, state, or Federal agencies with jurisdiction over the Project prior to publishing of the DQSP Final PA/EIS/EIR.

Response:

The BLM invited eligible Federal agencies, state and local governments, and federally recognized Indian tribes to participate in the DQSP PA/EIS/EIR as required by NEPA (40 CFR 1501.6) and the Federal Land Policy and Management Act (FLPMA) (43 CFR 1610.3-1(b)). The BLM consulted with the CDFW through formal and informal consultation. Table 6-1 (p. 6-1) of the DQSP Final PA/EIS/EIR lists the representatives from the CDFW who have been involved or consulted. Their participation included regular agency coordination calls with the BLM throughout the DQSP PA/EIS/EIR process and submitting comments on the DQSP Draft PA/EIS/EIR (see p. 138 of Appendix Z, DQSP Draft PA/EIS/EIR). The BLM considered the CDFW's comments in the development of the DQSP Final PA/EIS/EIS and provided responses as noted in Appendix AA.

The BLM has adequately consulted with the CDFW on the DQSP Final PA/EIS/EIR.

NEPA – Cultural Resources – Inadequate Analysis

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: Despite the Tribes' grave concerns and the close proximity of the Project to such a sensitive cultural resource area, the FEIS/EIR continues to repeatedly elevate potential direct impacts to archaeological resources above all other potential harms. For example, the FEIS/EIR concludes that the Project "will not have an adverse effect to the Mule Tank District" because the Rock Art District is "located outside of the Project area." See, e.g., FEIS at 4.5-6. Yet, this analysis fails to consider the risks to cultural resources that come from being in the vicinity of a large development: vandalism, destruction, visual intrusion, loss of cultural value and tribal connection to the landscape, etc. Such impacts will be exacerbated by the inclusion of a southeastern access road, which will bring workers and potentially members of the public closer to sensitive resources in the Mule Mountains. FEIS/EIR at 2-6 (noting 0.7 miles of new road along the southeastern boundary). The FEIS/EIR analysis must be revised to adequately consider these impacts.

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: In the response to comments, BLM argues that impacts to landscape connectivity would not substantially burden religion. FEIS/EIR, Appendix AA at 85 (Index No. 19-4). However, to the extent that this proposed Project and its impacts prevent access to the Mule Mountains for traditional practitioners or destroy the landscape connectivity necessary to traditional cultural practices, and thereby present a substantial burden on their religious free exercise, the federal government violates the Religious Freedom Restoration Act. See Burwell v. Hobby Lobby Stores, Inc., 573 U.S. 682 (2014).

Summary:

The DQSP Final PA/EIS/EIR failed to adequately analyze potential impacts on cultural resources including vandalism, destruction, visual intrusion, loss of cultural value, and loss of access to tribally important areas in the Mule Mountains.

Response:

NEPA directs that data and analyses in an EIS must be commensurate with the importance of the impact (40 CFR 1502.15), and that NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1(b)). The BLM is required to take a “hard look” at potential environmental impacts of adopting the DQSP Final PA/EIS/EIR. The level of detail of the NEPA analysis must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM Handbook H-1790-1, Section 6.8.1.2). The BLM need not speculate about all conceivable impacts, but it must evaluate the reasonably foreseeable significant effects of the proposed action.

The BLM describes the methodology for how it conducted the cultural resources impact analysis in Section 4.5.1 where the text describes the baseline information used, the assumptions, and types of effects; the text “includes information gathered as part of the NHPA §106 process about historic properties and the potential effects to such properties from the proposed undertakings” (p. 4.5-1). The BLM included a discussion of the landscape-level studies conducted during the inventory phase and Traditional Cultural Properties and Tribal Cultural Resources (see pp. 3.5-20 through 3.5-21) that were considered when looking at the cumulative analysis in Section 4.5.6.

The BLM analyzed the direct, indirect, and cumulative effects of the Project on cultural resources (see Section 4.5, *Cultural Resources*, p. 4.5-1). The BLM discussed the potential effects of development on resources important to the tribes including the possibility of destruction and vandalism, noting that “Ground-disturbing construction activities associated with the Project could directly affect cultural resources by damaging and displacing artifacts…indirect effects to archaeological resources, historic architectural resources, and places of traditional cultural importance could occur. For example, increased site access could result in vandalism or unintentional harm to cultural resources” (p. 4.5-5). The BLM also discussed the potential effects on the Mule Tank District acknowledging that the DQSP area may fall within the viewshed of the

Mule Tank District due to the district's elevation above the Project area (p. 4.5-6). The visual contrast of the area in relation to the Mule Mountains is also discussed in Section 4.19, *Visual Resources*, specifically on pages 4.19-6 through 4.19-17. For example, the Final PA/EIS/EIR states that from key observation point (KOP) 4 (Mule Mountains) looking toward the Project area, the Project "would cause Moderate to Strong contrast in form, color and texture due to the density and movement of construction equipment and activities as well as smooth-textured and distinct tan color of graded areas, which would provide moderate contrast against the natural setting of the Chuckwalla Valley and the Palo Verde Mesa" (p. 4.19-6).

The reduction in access was discussed in Section 4.17.3.1 (p. 4.17-4 of the DQSP Final PA/EIS/EIR). The BLM acknowledges that fencing of the Project area would eliminate public access to six open routes, including three routes that provide access to the Mule Mountain Area of Critical Environmental Concern (ACEC); however, the Final PA/EIS/EIR noted, "alternative access to the Mule Mountains would occur by traveling west on 22nd Avenue to Gravel Pit Road, southwest along Gravel Pit Road, and then west on an unpaved extension of 24th Avenue to BLM Routes 660863 and 661093" (see p. 4.5-7 and Figure 3.14-3 in Appendix A).

The BLM was unable to obtain sufficient information from Colorado River Indian Tribes (CRIT) or other tribes to define the cultural values associated with the Mule Mountains and how these values might be affected visually or otherwise by the DQSP. On May 9, 2019, the BLM made a request to the 15 tribes, including CRIT, to provide additional information regarding cultural values associated with the Mule Mountains that may be germane to indirect effects for all alternatives. Not discussed in the Final PA/EIS/EIR: the BLM received two tribal letters in response to the BLM's May 9, 2019, letter. One was from the Augustine Band of Cahuilla Indians. This letter is dated May 21, 2019, and indicates that the tribe is not aware of any specific cultural resources that would be affected by the DQSP. The other letter, dated June 5, 2019, is from the Twenty-Nine Palms Band of Mission Indians. This letter indicates that the tribe agrees that if the BLM were to select Alternative 1, a Memorandum of Agreement (MOA) process would be needed to resolve adverse effects. To date, the BLM has not received a response from CRIT regarding the BLM's May 9, 2019, letter request. The DQSP Final PA/EIS/EIR (see pp. 3.5-1, 3.5-7, 3.5-21, and 6-5) demonstrates the BLM's efforts to obtain information regarding cultural values associated with the Mule Mountains.

The BLM complied with NEPA's requirement to analyze the environmental consequences to cultural resources in the DQSP Final PA/EIS/EIR.

NEPA – Cultural Resources – Cumulative Effects

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: BLM's claim that it has analyzed the "direct, indirect, and cumulative effects to cultural resources" is undermined by the fact that it has utterly failed to consider the impacts at a landscape level. Project by project, the Tribes' cultural footprint is being erased and this Project is no exception. The FEIS/EIR's omission of any discussion of cultural landscapes violates both NEPA and CEQA and is therefore highly prejudicial. The analysis must be revised to properly account for and mitigate these impacts.

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: In ignoring the connective and cumulative value of these resources, the FEIS/EIR fails to evaluate whether any of these non-eligible prehistoric archaeological sites or isolates contribute to the cultural landscapes discussed in the prior section. Even if these resources are not significant on their own- a characterization that the Tribes do not support- the FEIS/EIR must be revised to evaluate whether these resources are significant because of their contribution to a broader cultural landscape.

The FEIS/EIR's focus only on "eligible" resources misconstrues state and federal law. "The FEIS/EIR must avoid conflating eligibility for the CRHR with significant impacts analysis under CEQA. Impacts to archaeological resources considered non-eligible for listing on the CRHR- perhaps because of their lack of integrity- may nevertheless be significant for CEQA purposes. Pub. Resources Code § 21074(2)." Similarly, BLM must not equate significant cultural resources with only those buildings, sites, structures, objects, and districts eligible for inclusions on the NRHP. NEPA guidelines specify that EISs must address impacts to "historic and cultural resources" (40 C.F.R. § 1502.16(g) (emphasis added)), thus requiring a more expansive analysis than the one undertaken for National Historic Preservation Act purposes. The FEIS/EIR must be revised to properly consider these resource impacts under CEQA and NEPA, respectively.

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: Unsurprisingly, given this faulty analysis, the FEIS/EIR then concludes that "the Project's contribution to impacts would not be cumulatively considerable." FEIS/EIR at 4.5-13. The FEIS/EIR appears to reach this conclusion because the Project's direct destruction of cultural resources is only a small fraction of the overall total of cultural resources in the study area. Id. at 4.5-13. But this is the exact circumstance in which a cumulative impact should be recognized - where the individual project's contribution looks tiny on its own, but together with other projects represents a significant impact on a resource. E.g., Kings County Farm Bureau v. City of Hanford, 221 Cal.App.3d 692 (1990). The FEIS/EIR must be revised to recognize the Project's cumulatively significant impact.

Summary:

The BLM's focus on only "eligible" cultural resources and failure to include non-eligible sites and isolates in the cumulative analysis misconstrued Federal law. The BLM failed to adequately analyze cumulative effects on cultural resources by not considering impacts at a landscape level.

Response:

The BLM must discuss the cumulative effects of the proposed action and the alternatives when preparing an EIS (BLM Handbook H-1790-1, Section 6.8.3). The CEQ's regulations define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions" (40 CFR 1508.7).

The BLM defined the methodology for analyzing cultural resources in Section 4.5.1 of the DQSP Final PA/EIS/EIR. Here, the BLM states, "For purposes of NEPA, this Final PA/EIS/EIR includes information gathered as part of the NHPA §106 process about historic properties and the potential effects to such properties from the proposed undertakings…Section 106 of the NHPA requires that the agency take into account the effects of undertakings on historic properties, defined as any district, site, building, structure, or object that is included in or eligible for inclusion in the" National Register of Historic Places (NRHP) (p. 4.5-1). However, even though, by definition, a non-eligible site would have a finding of "no effect" under Section 106, the BLM still used the information from the field inventory investigations, including non-eligible sites and isolates as described on pages 3.5-8 through 3.5-19 of the DQSP Final PA/EIS/EIR. Furthermore, the section includes a discussion of the landscape-level studies conducted during the inventory phase and

Traditional Cultural Properties and Tribal Cultural Resources (see pp. 3.5-20 through 3.5-21) that were considered when looking at the cumulative analysis in Section 4.5.6.

The BLM's methodology for analyzing cumulative effects on cultural resources is described in Section 4.1.5, *Cumulative Scenario Approach*, and in the cultural resources cumulative effects analysis on pages 4.5-12 through 4.5-14 of the DQSP Final PA/EIS/EIR. The BLM defined the geographic scope of analysis for cultural sites, traditional use areas, and cultural landscapes on the solar plant site, along the linear facilities corridor, and in the area of potential effects as "based on the natural boundaries and physical conditions relevant to the resource affected, rather than jurisdictional boundaries…but not beyond the scope of the direct and indirect effects of the Proposed Action and alternatives" (Table 4.1-1, p. 4.1-7). The DQSP Final PA/EIS/EIR also described the timeframe that cumulative effects may occur, the types of projects that would be likely to occur, the types of archaeological sites and districts that could be affected, and the nature and type of effects that would be possible on the cultural landscape consisting of hearth features, trails, campsites, habitation sites, lithic scatters, and ceramic scatters (see p. 4.5-12 through 4.5-14 of the DQSP Final PA/EIS/EIR).

The BLM complied with NEPA's and NHPA's requirement to analyze the cumulative effects on cultural resources in the DQSP Final PA/EIS/EIR.

NEPA – Cultural Resources - Mitigation

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: Further, BLM states that it will continue to consult Tribes "in the development of mitigation, monitoring, and discovery plans outlined in mitigation measure CULTURAL- 5 to address any discoveries during construction and operation of the facility." FEIS/EIR, Appendix AA at 85 (Index No. 19-4). However, there is no discussion of the parameters for including Tribes within mitigation measure CULTURAL-5 or any indication of what these mitigation plans will actually do. This improper deferral of mitigation violates both NEPA and CEQA.

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: BLM continues to rely on data recovery, removal of resources, and long-term curation as "mitigation" for impacts to prehistoric cultural resources. See, e.g., Appx. G-41 e Resolution of adverse effects to historic properties will be developed in consultation and may include research and documentation, data recovery excavations, curation, public interpretation, or use or creation of historic contexts.''); id. ("An example of treatment is data recovery at affected sites."). BLM attempts to paint data recovery as a way to "teac[h] us about the lives of historic people," all while ignoring the very real cultural and spiritual impacts on the living descendants of those people. FEIS/EIR at 4.5-10. As CRIT has repeatedly informed BLM, such efforts do not- in any way- mitigate for the significant cultural harms caused by removing the footprint of tribal members' ancestors from the landscape. Indeed, such measures cause more harm than good. BLM has informed CRIT that it is "required" by law to curate such resources, and that it cannot allow such resources to be reburied or otherwise left on-site. As CRIT has previously explained to BLM, this position is not supported by the Archaeological Resources Protection Act (ARPA), curation regulations, or any ongoing or prior litigation.

Summary:

The BLM violated NEPA, the ARPA, and the NHPA by deferring mitigation processes and commitments to a future date. The BLM is nonconforming to the ARPA and curation regulations by failing to consider reburial of cultural resources unearthed during construction of the DQSP.

Response:

NEPA requires the BLM to include a discussion of measures that may mitigate adverse environmental impacts (40 CFR 1502.14(f), 40 CFR 1502.16(h)). Potential forms of mitigation include: (1) avoiding the impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (3) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or (5) compensating for the impact by replacing or providing substitute resources or environments (40 CFR 1508.20).

Similarly, Section 106 of the NHPA requires a Federal agency to consider the potential effects of its undertaking on historic properties. When a Federal agency has found that an undertaking may adversely affect historic properties, it must develop and consider alternatives or measures to avoid, minimize, or mitigate such effects. The State Historic Preservation Officer (SHPO) concurred with the BLM's determinations of eligibility on September 24, 2019,[1] including the assessment of effects for the Proposed Action (Alternative 1), which: "would result in direct adverse effects to historic properties. Should Alternative one become the selected alternative, the BLM will continue Section 106 consultation to resolve adverse effects through a Memorandum of Agreement prior to the NEPA Record of Decision." The SHPO also concurred with the BLM's determination that there would be no adverse effects if Alternatives 2 (Resource Avoidance Alternative) became the selected alternative.

The regulations implementing NHPA Section 106 (36 CFR Part 800) allow a range of options when determining what constitutes appropriate mitigation of adverse effects on historic properties; alternative mitigation is not prohibited and there is no prescription for specific measures (36 CFR § 800.6(a)). The BLM may opt to develop alternative, creative measures with cooperating agencies, project proponents, and tribal governments, including compensating for the impact by providing substitute resources or funding, as part of resolving adverse effects.

The DQSP Final PA/EIS/EIR includes appropriate measures to mitigate effects on cultural resources and describes future tribal participation. As stated on page 4.6-7 of the DQSP Final PA/EIS/EIR, NHPA Section 106 government-to-government consultation with interested Native American tribes is ongoing. Should the Proposed Action be approved, mitigation measures CULTURAL-1 and CULTURAL-2 would serve to mitigate adverse effects on historic properties as a result of the Project. Government-to-government consultation will occur between the BLM and Native American tribes during implementation of mitigation measures CULTURAL-1 and CULTURAL-2. Provisions to resolve the adverse effects on historic properties would be described in an MOA and a Historic Properties Treatment Plan (HPTP) prepared in accordance with Section 106 of the NHPA. Mitigation measure CULTURAL-1 would only apply if Alternative 1 (Proposed Action) becomes the selected alternative because only Alternative 1 would result in direct adverse effects on historic properties. However, mitigation measure CULTURAL-2 would still apply if Alternative 2 or Alternative 3 become the selected alternative.

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[1] State of California, Department of Parks and Recreation – Office of Historic Preservation. Re: Continued Section 106 consultation for the Desert Quartzite Solar Photovoltaic Project, Riverside County, Ca. From Julianne Polanco, State Historic Preservation Officer to Douglas J. Herrema, Field Manager, BLM. Sent via email on September 24, 2019.

As noted on page G-1, Appendix G of the DQSP Final PA/EIS/EIR, mitigation measures have been developed from a combination of sources and regulatory requirements of other Federal, state, and local agencies. Mitigation measure CULTURAL-5 (DQSP Final PA/EIS/EIR, Appendix G, p. G-42) states: "[the Monitoring and Discovery Plan] shall also detail procedures for halting construction, making appropriate notifications to agencies, officials, and Native American tribes, and assessing NRHP [National Register of Historic Places] and CRHR [California Register of Historical Resources] eligibility in the event that unknown archaeological resources are discovered during construction." Additionally, mitigation measure CULTURAL-4 (DQSP Final PA/EIS/EIR, Appendix G, p. G-42) provides that the Native American Tribal Monitor will be consulted to discuss the significance of archaeological sites discovered during construction, operation and maintenance, or decommissioning. Mitigation measure CULTURAL-7 (DQSP Final PA/EIS/EIR, Appendix G, p. G-43) states that the Cultural Resources Monitoring Report shall be submitted to the BLM, County, Eastern Information Center, Patton Memorial Museum, and interested tribes.

Tribal consultation has been incorporated as a component of measures to address monitoring and unanticipated discoveries during construction, operation, and decommissioning of the DQSP. Specifically, management recommendations considered by the BLM include those contained in Appendix P (Class III Cultural Survey Report) of the DQSP Final PA/EIS/EIR. Specifically, Addendum 2 of Appendix P (p. 53) states: "recommended measures should be included in a MOA that will include a HPTP and a Monitoring and Discovery Plan to address potential unanticipated discoveries that could occur during the course of Project construction and operation. As noted in the draft EIS/EIR, the MOA will be developed by the BLM in consultation with the Advisory Council on Historic Preservation (ACHP), SHPO, the Applicant, Riverside County, interested Native American Tribes, and any other consulting parties, as appropriate. The MOA will describe the adverse effects to . . . historic properties, will include measures to resolve the adverse effects, and must be executed prior to the BLM's issuance of the Record of Decision (ROD). Specific measures to resolve adverse effects will be developed in a HPTP and included as an attachment to the MOA. Execution of the MOA will conclude the Section 106 process."

36 CFR §800.1(c) requires the agency official to complete the Section 106 process "prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license." Accordingly, should Alternative 1 (Proposed Action) be selected, the MOA would be developed by the BLM in consultation with the Advisory Council on Historic Preservation, SHPO, the Applicant, Riverside County, interested Native American tribes, and any other consulting parties, as appropriate. The MOA would describe the adverse effects on historic properties, would include measures to resolve the adverse effects, and would be executed prior to the BLM's issuance of the Record of Decision (see p. 4.5-3 of the DQSP Final PA/EIS/EIR). Because there would be no adverse effects on historic properties if Alternative 2 or Alternative 3 is selected, an MOA would not be required.

BLM curation of artifacts: The BLM is required to ensure that curation and disposition of all archaeological and historical materials and data from Federal lands conform to 36 CFR 79 and the Secretary of the Interior's Standards for Archaeological Documentation. Federal law and regulation require Federal collections be deposited in an established professional curation repository that can provide long-term care (curation or curatorial services) and whose demonstrated mission is to house, preserve, document, research, interpret, and exhibit the material in trust for present and future generations. The treatment and disposition of museum objects discovered on BLM lands rests wholly with the BLM and there is a lack of discretionary prerogatives for agencies in the curation of museum property/collections, as Federal requirements/standards for the deposition and care of Federal museum collections are clearly laid out (California IB-2016-007).

Environmental Justice

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: The FEIS/EIR contains no discussion specific to Native American groups whatsoever, choosing instead to move topically through a number of potential environmental justice issues: Air Resources, Geology and Soils, Hazards and Hazardous Materials, Noise, Recreation and Public Access, Social and Economic Effects, Transportation and Traffic, Visual Resources, and Water Resources. FEIS/EIR at 4.6-2 -3. Yet, even in its discussion of Social and Economic Issues, the FEIS/EIR limits its discussion to housing and makes no mention of the unique impacts that this kind of development has on tribal groups. FEIS/EIR at 4.6-4.

This gross omission renders the analysis inadequate under federal and state law. Unlike most members of the public, tribal members maintain long-standing ancestral and traditional practices that connect their identities to specific environments. Tribal members cannot easily shift their use and enjoyment of public lands to other, non-industrialized areas, as may be the case for many members of the public. Once these ancestral ties are severed, either by the removal of cultural resources or the fencing and development of the entire site, they cannot be regained. Consequently, the FEIS/EIR must be revised to recognize the significant environmental justice impacts of the proposed Project on CRIT and other affected tribes.

Summary:

The DQSP Final PA/EIS/EIR fails to adequately analyze environmental justice implications by not considering Native American groups in the analysis.

Response:

NEPA directs that data and analyses in an EIS must be commensurate with the importance of the impact (40 CFR 1502.15), and that NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail (40 CFR 1500.1(b)). The BLM is required to take a “hard look” at potential environmental impacts of the DQSP Final PA/EIS/EIR.

The level of detail of the NEPA analysis must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and alternatives (BLM Handbook H-1790-1, Section 6.8.1.2). The BLM need not speculate about all conceivable impacts, but it must evaluate the reasonably foreseeable significant effects of the proposed action. A land use planning–level decision is broad in scope. For this reason, analysis of the land use plan amendment alternatives is typically broad and qualitative rather than quantitative or focused on site-specific actions.

The BLM is responsible for implementing the provisions of Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Accordingly, the BLM analyzed whether the alternatives would adversely and disproportionally affect minority populations, low-income communities, and tribes and considered the aggregate, cumulative, and synergistic effects of its actions along with the actions taken by other parties. While environmental justice analysis is specifically concerned with disproportionate effects on environmental justice communities, the social and economic analysis produced in accordance with NEPA considers all potential social and economic effects, positive and negative, on any distinct group (BLM Land Use Planning Handbook, Appendix D, p. D-11).

The BLM identified the Colorado River Indian Reservation as an environmental justice community in Section 3.6 (p. 3.6-1) of the DQSP Final PA/EIS/EIR, and tribal lands are shown on Figure 3.6-1. The BLM addressed the requirements of NEPA and Executive Order 12898 in Section 4.6, *Environmental Justice* (p. 4.6-1). The environmental justice discussion in Section 4.6 draws conclusions as to whether minority, low-income, and/or tribal peoples have a disproportionate share of the negative environmental consequences resulting from the Project and/or plan amendments. The BLM determined that the action alternatives were not expected to cause disproportionately high or adverse impacts on minority and/or low income populations, inclusive of tribal peoples and the Colorado River Indian River Reservation. The BLM reviewed the findings and analysis contained in the following sections of the DQSP Final PA/EIS/EIR as part of the environmental justice analysis: 4.2, *Air Resources*; 4.7, *Geology and Soils*; 4.9, *Hazards and Hazardous Materials*; 4.12, *Noise*; 4.14, *Recreation and Public Access*; 4.15, *Social and Economic Effects*; 4.17, *Transportation and Traffic*; 4.19, *Visual Resources*; and 4.20, *Water Resources*. Refer to Section 4.6.1 of the DQSP Final PA/EIS/EIR (p. 4.6-1) for a discussion of the methodology used in the effects analysis for environmental justice. In reviewing each of these sections, the environmental justice analysis considered potential impacts and mitigation measures and whether a disproportionately high and adverse impact would result for the area within 6 miles of the proposed Project site, or on the secondary area that includes the Colorado River Indian Reservation. The analysis concluded that impacts on these resources would not be disproportionately high or adverse for environmental justice populations (including tribal peoples and the Colorado River Indian River Reservation) in these areas, regardless of which action alternative is selected.

The BLM complied with NEPA's requirement to analyze the environmental justice impacts in the DQSP Final PA/EIS/EIR.

Response to Comments

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: CRIT raised several issues with respect to the DEIS/EIR released for this Project on August 10, 2018. FEIS/EIR, Appendix Z at 155-186. In reviewing BLM's response to these comments, it appears that BLM's efforts amount to little more than a summary or recitation of the concerns raised by the Tribes. This effort violates NEPA. 40 C.F.R. § 1503.4; State of California v. Block, 690 F.2d 753, 773 (9th Cir. 1982) (lead agency must provide "good faith, reasoned analysis in response" to comments raised on draft environmental review documents) (internal citations and quotations omitted). As BLM staff failed to address the serious concerns raised by the Tribes, CRIT is compelled to file this protest letter seeking additional review.

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: BLM does not respond to CRIT's specific request to update CUL-4, Procedure 2 to explicitly state that local area tribes should be involved in determining the appropriate treatment for cultural resources on BLM-managed lands, rather than just BLM alone. Additionally, BLM does not respond to CRIT's specific request to update CUL-4, Procedure 3 to explicitly state that ground disturbance shall not resume in the area of the discovery until a consultation with local area tribes is completed. These failures render the final mitigation measures inconsistent with the NHPA.

Basin and Range Watch

Kevin Emmerich

Issue Excerpt Text: BLM Master Response 5a fails to specifically address the comments about Executive and Secretarial Orders. In many cases, the BLM interprets these orders into the purpose and need statement. The DEIS did not follow Secretarial Order 3355 and failed to meet that timeline, yet it is justified in the Purpose and Need Statement.

Summary:

The DQSP Final PA/EIS/EIR did not adequately respond to public comments received on the DQSP Draft PA/EIS/EIR.

Response:

The BLM is required to assess, consider, and respond to all substantive comments received (40 CFR 1503.4). Substantive comments are those that reveal new information, missing information, or flawed analysis that would substantially change conclusions (BLM Handbook H-1601-1, pp. 23–24).

In compliance with NEPA, the BLM considered all public comments submitted on the DQSP Final PA/EIS/EIR. The BLM complied with 40 CFR 1503.4 by performing a detailed comment analysis that assessed and considered all substantive comments received. Appendix AA of the DQSP Final PA/EIS/EIR presents summarized the issues raised by comment letters and meaningful responses to all substantive comments. The BLM's responses to comments on the DQSP Draft PA/EIS/EIR raised by CRIT are found in Appendix AA of the DQSP Final PA/EIS/EIR (comment index numbers 19-1 through 19-32). In its responses, the BLM identified any modifications to the alternatives, clarification and additional information added as a result of the public comment, improvements to the impacts analysis, and factual corrections made as a result of public comment. The BLM's response also explains why certain public comments did not warrant further agency response.

The BLM's response to CRIT's request to revise mitigation measure CULTURAL-4, procedures 2 and 3, is found in Appendix AA, Index Number 19-15 of the DQSP Final PA/EIS/EIR. In response to the comment, the BLM added language to mitigation measure CULTURAL-4, procedure 2, to clarify that appropriate treatment for cultural resources on BLM-managed land will be determined in accordance with 36 CFR 800.13 (DQSP Final PA/EIS/EIR Appendix G, p. G-42). Procedure 4 of mitigation measure CULTURAL-4 of the DQSP Final PA/EIS/EIR (Appendix G, p. G-42) states: "Further ground disturbance shall not resume within the area of the discovery until a meeting is convened with the aforementioned parties and a decision is made with the concurrence of the BLM and (on private land) the County Archaeologist as to the appropriate preservation or mitigation measures." The Native American Tribal Monitor (see mitigation measure CULTURAL-6, Appendix G, p. G-43) is identified as a consulting party in procedures 1 and 2 of mitigation measure CULTURAL-4.

As stated in Appendix AA of the DQSP Final PA/EIS/EIR (Index Number 11-12), the DQSP PA/EIS/EIR was already in preparation when Secretarial Order 3355 was issued. The BLM received a page count waiver from the Department of the Interior and the BLM has taken steps to comply with this order, such as simplifying and reducing redundancy within the main text of the DQSP Final PA/EIS/EIR, as discussed in Section 1.9 (see pp. 1-18 through 1-20 of the DQSP Final PA/EIS/EIR). This simplification includes deletion of redundant text and non-substantive introductory text, and movement of non-site-specific regional and background information in Chapter 3 (*Affected Environment*) to Appendix D (*Regional Affected Environment*). These streamlining actions are not a substantial change in the Proposed Action or significant new information that would require a supplemental EIS under 40 CFR § 1502.9(c).

The BLM adequately responded to public comments of the DQSP Draft PA/EIS/EIR.

Tribal Consultation

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: As detailed in the Tribes comment letter on the DEIS/EIR, government-to-government consultation for this Project has been inadequate. In May 2016, the Colorado River Indian Tribes adopted a government-to-government consultation policy to manage its relationship with federal agencies. See FEIS/EIR, Appendix Z at 174-79. CRIT requested that each federal agency acknowledge the policy prior to conducting government-to- government consultation with its Tribal Council. The Tribes informed BLM that it would not meet with BLM decisionmakers until BLM acknowledged the policy. The purpose of this request was to ensure that BLM was aware of CRIT's definition of adequate consultation prior to spending the time and resources engaging in consultation. Contrary to responses to comment, CRIT has not yet received any indication that the BLM office responsible for this Project acknowledged the policy. While CRIT is very open to conducting in-person, government-to-government consultation with BLM regarding this Project, any consultation meeting would need to include acknowledgment and discussion of this policy.

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: In its analysis of whether the Project would cause a substantial adverse change to a resource identified through consultation with any California Native American tribe that requests consultation, BLM mentions only its consultation with Twenty-Nine Palms Band of Mission Indians Tribe. FEIS/EIR at 4.5-11. Despite the Tribes' repeated requests for Section 106 consultation on this Project, BLM only reached out to CRIT to set up government-to-government consultation in September 2018, once the DEIS had already been issued. FEIS/EIR at 6-5. Such a delay defeats the purposes of Section 106 consultation, which is meant to give tribes an opportunity to provide valuable input that will be meaningfully considered in the planning process. See 36 C.F.R. § 800.l(c) ("The agency official shall ensure that the section 106 process is initiated early in the undertaking's planning, so that a broad range of alternatives may be considered during the planning process for the undertaking."); see also FEIS/EIR, Appendix Z at 174-79. Waiting until the DEIR has already been issued and much of the analysis has already been undertaken is not in keeping with BLM's consultation responsibilities.

Summary:

The BLM failed to conduct adequate government-to-government consultation for the DQSP PA/EIS/EIR. The BLM failed to acknowledge the May 2016 CRIT government-to-government consultation policy to manage its relationship with Federal agencies.

Response:

Section 101(d)(6) of the NHPA requires that "in carrying out its responsibilities under section 106, a Federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to properties [of traditional religious and cultural importance to be eligible for inclusion on the National Register]." It is BLM policy to "consult with affected tribes to identify and consider their concerns in BLM land use planning and decision-making, and [the BLM] shall document all consultation efforts" (BLM Manual Section 8120.06.E).While the BLM manager must give tribal concerns and preferences due consideration and make a good-faith effort to address them as an integral part of the decision-making process, final decisions may not always conform with the preferences and suggestions of the tribes (BLM Handbook H-8120-1, p. V-11).

The BLM has consulted with tribal governments throughout the development of the DQSP PA/EIS/EIR. The BLM's consultation with tribal governments is summarized in Section 6.3.3 of the DQSP Final PA/EIS/EIR (p. 6-4).

A specific legal requirement to notify Native Americans can generally be met through certified mail, return receipt requested, or delivery confirmation from a delivery service (BLM Handbook H-8120-1, p. V-7). The BLM has reviewed the CRIT consultation policy and the District Manager, California Desert District, has sent a response letter to CRIT outlining the BLM's established policies and procedures for Government-to-Government Consultation with Tribal Governments (MS-1780).[2] Additional Federal documents directing the BLM's approach to government-to-government consultation were also provided in the correspondence, as well as a commitment to continue consultation with CRIT. For the DQSP, the BLM has consulted, and continues to consult, with 15 tribes, including the Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, Cabazon Band of Mission Indians, Cahuilla Band of Mission Indians, Chemehuevi Cultural Center, Cocopah Indian Tribe, CRIT, Fort Mojave Indian Tribe, Fort Yuma Quechan Tribe, Morongo Band of Mission Indians, Ramona Band of Cahuilla Mission Indians, San Manuel Band of Mission Indians, Soboba Band of Luiseno Indians, Torres Martinez Desert Cahuilla Indians, and Twenty-Nine Palms Band of Mission Indians.

As noted in Appendix AA of the DQSP Final PA/EIS/EIR (Index Number 19-31), the BLM has notified the tribes and requested government-to-government consultation at every key juncture in the Section 106 and NEPA processes for the proposed Project. These key junctures include at the earliest stages of Project review in March 2014 and again when the BLM transmitted the cultural resource work plan in August 2014. The BLM invited the tribes to visit the site on June 10, 2015, in which CRIT participated. On April 20, 2016, the BLM sent tribes a copy of the Class III cultural report and extended another offer to consult with tribes. On April 4, 2018, the BLM notified tribes of its intent to conduct additional site tests and extended an offer to consult. The BLM invited tribes to consult when the BLM made its determination of eligibility and findings of effect on June 22, 2018. In a letter dated August 9, 2018, the BLM notified the 15 tribes, including CRIT, about the release of the Draft PA/EIS/EIR for public comment. The BLM notified the public and tribes of a public meeting on the Draft PA/EIS/EIR held by the BLM in Palm Desert and Blythe, CA on September 26 and 27, 2018, where a member of the CRIT attended. Each tribe received a CD copy of the Draft PA/EIS/EIR and instructions for commenting. The August 9, 2018, letter also offered government-to-government consultation with each tribe, including CRIT, and the BLM held government-to-government consultation with the Cahuilla Band of Mission Indians and 29 Palms Band of Mission Indians. Please also see Index Number 19-30 of Appendix AA. On May 9, 2019, the BLM made another request for the tribes to provide information regarding resources within the Mule Mountains.

The BLM adequately consulted with tribal governments regarding the DQSP PA/EIS/EIR.

NEPA – Visual Resources – Inadequate Analysis

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: BLM failed to update the Visual Resources section of the FEIS/EIR to take into account of the Project's visual impacts on Tribal members. Rather, BLM purports to address these concerns by updating Sections 3.5 and 4.5.3.1 to include additional information summarized in the addendums 2 and 3 of the Class III report prepared for the Desert Quartzite Solar Project. FEIS/EIR,

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[2] Bureau of Land Management, California Desert District. Re: Government-to-Government Consultation Policy of the Colorado River Indian Tribes, Sent via Certified Mail January 8, 2018.

Appendix AA at 92 (Index No. 19-19). However, neither of these sections discuss or address the Project's visual impact on Tribal members and the cultural landscape.

Summary:

The BLM failed to update the *Visual Resources* section of the DQSP Final PA/EIS/EIR to take into account the DQSP visual impacts on tribal members.

Response:

The BLM provided an update to the Project effects on visual resources in Appendix P, Chapter 5 of Addendum 2 (p. 51) of the DQSP Final PA/EIS/EIR, which provides an analysis of potential indirect visual effects that could result from the DQSP. The analysis for visual resources assesses the effects on dispersed recreation, which includes tribal representatives visiting the area for cultural and ceremonial uses. Addendum 2 relied on visual simulations of the Project area from eight KOPs, one of which (KOP 4) was located at NRHP-listed site P-33-000773, in the Mule Mountains, approximately 1 mile from the southwestern boundary of the DQSP. The visual analysis prepared for the DQSP Draft PA/EIS/EIR concluded that Alternative 1 (Proposed Action) would result in a slight reduction in scenic quality for viewers in the Mule Mountains and that even with visual mitigation in the form of design elements to reduce form, color, line, and texture contrast, the DQSP would have moderate adverse impacts on visual resources due to moderate to strong visual contrast and impacts experienced within the foreground/middleground zone (Appendix P, p. 51).

As noted in Appendix AA of the DQSP Final PA/EIS/EIR (Index Number 19-19), Sections 3.5 and 4.5.3.1 (*Cultural Resources*) of the DQSP Final PA/EIS/EIR were updated to include additional information summarized in Addendums 2 and 3 of the Class III report prepared for the DQSP.

The BLM's overall Visual Resource Management (VRM) policy contained in BLM Manual 8400 is a mandatory land use management policy intended to be administered consistently across BLM-administered lands. Instruction Memorandum 2009-167 (Application of the Visual Resource Management Program to Renewable Energy) clarifies the BLM's VRM policies and procedures for consistent VRM implementation and application. BLM policy specifies that all visual impacts are to be mitigated. The analysis contained in the DQSP Final PA/EIS/EIR determined that most viewers (including tribal members) would experience transient impacts at KOP 4 and NRHP-listed site P-33-000773 (see Appendix G of the DQSP Final PA/EIS/EIR, pp. 51 and 53). As a result, the BLM updated the NRHP registration form to include P-33-000773 and will update, as appropriate, the MOA (if Alternative 1 is selected), the HPTP, and the Monitoring and Discovery Plan.

The BLM complied with NEPA's requirement to analyze the environmental consequences to visual resources in the DQSP Final PA/EIS/EIR.

NEPA – Purpose and Need

Colorado River Indian Tribes

Sara Clark

Issue Excerpt Text: BLM states that "[o]ther alternative sites, technologies and methods ... were considered by the BLM but eliminated from detailed analysis under NEPA." FEIS/EIR at 2-39. The alternative locations considered were all rejected. FEIS/EIR at 2-41 to -44. Relying on its improperly narrow statement of purpose and need, BLM failed to consider alternative technologies, projects, or locations that could meet the same renewable energy goals as the proposed Project without the same devastating environmental and cultural impacts. The FEIS/EIR analysis must be revised to correct this error.

Basin and Range Watch

Kevin Emmerich

Issue Excerpt Text: We sill [sic] maintain that the Purpose and Need Statement is too narrow. According to the BLM's NEPA Handbook, The purpose and need for the action is usually related to achieving goals and objectives of the LUP; reflect this in your purpose and need statement…For the California Desert Conservation Area, the FEIS Purpose and Need Statement fails to fully consider the limitations the project would impose on Class M management areas for the CDCA and how closing off so many acres to public access would not meet Class M Multiple Use objectives…The narrow scope of the Purpose and Need Statement and the lack of reasonable alternatives considered fail to consider all of the elements of the California Desert Conservation Area plan.

Summary:

The BLM's purpose and need statement was too narrow and failed to consider:

- Alternative technologies, projects, or locations that could meet the same renewable energy goals as the DQSP, and
- All of the elements of the CDCA plan.

Response:

In accordance with NEPA, the BLM has discretion to establish the purpose and need for a proposed action (40 CFR 1502.13). The BLM must construct its purpose and need to conform to existing decisions, policies, regulation, or law (BLM Handbook H-1790-1, Section 6.2). The purpose and need may not be so narrow that only one alternative becomes a foreordained outcome, and may not be so broad that an infinite number of possibilities could accomplish the goals of the project.

The BLM established the purpose and need for the DQSP Final PA/EIS/EIR, which is described at Section 1.3.1 of the Final EIS/EIR, to meet Title V of the FLPMA of 1976 (43 USC §1761(a)(4)). The primary action that the BLM considered is a response to a specific right-of-way (ROW) grant application from the Applicant to construct and operate a specific solar project on a specific site managed by the BLM. As a result, the BLM determined that a key purpose of this Project was to determine whether to approve, approve with conditions, or deny that ROW application for the Proposed Action. This allowed the BLM to consider three alternatives on the Project site and the No Action alternative. As stated in Section 2.2.2 of the DQSP Final PA/EIS/EIR, the Project (Alternative 1), Resource Avoidance Alternative (Alternative 2), and Reduced Project Alternative (Alternative 3) were found to meet the requirements set forth by Section 6.6.3 of the BLM NEPA Handbook (H-1790-1), and were therefore carried forward for more detailed analysis in Chapter 4. The purpose and need provided the appropriate scope to allow the BLM to analyze a reasonable number of alternatives that represent alternative approaches to decide whether to approve, approve with modification(s), or deny issuance of a ROW grant, and to allow the BLM to consider the associated land use plan amendments that would follow as part of the ROW action.

In addition to the alternatives considered in detail, Section 2.9, *Alternatives Considered but Eliminated from Detailed Analysis*, provided detailed explanation as to how and why the BLM eliminated other alternatives suggested by the public during scoping and in the Draft EIS/EIR. Alternatives eliminated from detailed analysis included alternative sites (Section 2.9.2.1, p. 2-41), alternative construction methods (Section 2.9.2.2, p. 2-44), and alternative designs and layouts and alternative technologies for generating or delivering power. The BLM encouraged the Applicant to locate its Project on public land with the fewest potential conflicts and avoid BLM locations with significant environmental concerns, such as critical habitat, ACECs, Tortoise Conservation Areas and associated wildlife linkages, designated off-highway vehicle areas, wilderness study areas, and designated wilderness areas.

As the introduction in Appendix E notes, the “EIS/EIR has been based on the management framework that was available under the CDCA Plan, and on BLM’s renewable energy siting, data collection, and impact analysis requirements that were in place as of March 6, 2015” (p. E-1). The BLM did not consider all management prescriptions of the DRECP that applied the DRECP Conservation and Management Actions (CMAs) because the DQSP was not subject to the DRECP due to the DQSP’s status as a pending application at the time the DRECP was signed (DRECP Section II.3.2.4, pp. 68–69, as quoted in Appendix E, p. E-1).

The BLM explained the relationship of the Final EIS/EIR to the CDCA management framework throughout Appendix E. The BLM provided an analysis of the DRECP’s effect on BLM’s land management use allocations that were operative under the CDCA Plan in Appendix E of the DQSP Final PA/EIS/EIR. For example, Section 2.1, *Onsite and Adjacent Land Use Allocations*, states that “Under the CDCA Plan, the Project area was designated as Multiple Use Class – Moderate (MUC-M). Section 4.10 of the EIS/EIR evaluates the conformance of the Project with this classification” (p. E-2). Another example in Section 2.2, *Nearby Land Use Allocations*, states that, “Under the CDCA Plan, land use allocations in the vicinity of the Project were designated according to the MUC system. The directly adjacent lands were designated the same as the Project site, as MUC-M. MUC-Limited (MUC-L) and MUC-Intensive (MUC-I) lands are also present in the Project vicinity. Section 4.10 of the EIS/EIR evaluated the impact of the Project within the context of the overall amount of MUC-M land within the Project vicinity” (p. E-3). This analysis is noted in subsequent sections and includes explanation for consideration of the VRM classification, resource protection allocations (e.g., ACECs, Wilderness Areas), and recreation. Appendix E of the DQSP Final PA/EIS/EIR also evaluated CMAs with respect to the DQSP. In general, the analysis revealed that the DQSP design and/or mitigation measures satisfy applicable CMAs. In many cases, wording changes were made to mitigation measures to bring the language into line with the CMA language. In cases where no such changes are made, the analysis describes why the Applicant is not required to modify the Project or mitigate potential impacts, or why the CMA does not apply (see pp. E-4 and E-5 of Appendix E).

The purpose and need statement for the DQSP Final PA/EIS/EIR responds to BLM’s responsibility under FLPMA to consider ROW applications (43 CFR §2804.25). The BLM properly established the purpose and need for the DQSP Final PA/EIS/EIR.

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Appendix D:

RESPONSE TO CITIZEN FOR RESPONSIBLE SOLAR

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

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Via Overnight and Electronic Mail

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Re: Comments on the Biological Resources Section of the Draft Plan Amendment/ Environmental Impact Statement/ Environmental Impact Report for the Desert Quartzite Solar Project (DOI-BLM-CA-D060-2017-0002; CA SCH 2015031066)

Dear Mr. Anderson, Ms. Grace, and Mr. Brady:

On behalf of Citizens for Responsible Solar, we submit these comments on the Plan Amendment/ Environmental Impact Statement/ Environmental Impact Report ("DEIR/S") for First Solar's ("Applicant") 450-megawatt ("MW") Desert Quartzite Solar Project ("Project"), prepared pursuant to the National Environmental Policy Act ("NEPA") and the California Environmental Quality Act 26-1

("CEQA").[1] The total Project area under application for approval from Bureau of Land Management ("BLM") and Riverside County is approximately 5,275 acres, with 5,115 acres of BLM lands and 160 acres of County land. This acreage includes potential alternatives. 26-1

The proposed Project is located in the southern California inland desert, approximately 2.75 miles southwest of the City of Blythe, just south of the Interstate 10 (I-10) freeway, and 1.5 miles southwest of Blythe Airport in Riverside County, California (Figure 2-1).

Construction and operation of the Project would disturb approximately 3,560 acres of BLM land for the solar plant site and other Project-related facilities, 54 acres of BLM land for a 2.79-mile corridor for a 230 kilovolt ("kV") gen-tie with a width of 160 feet, and 2 acres for the offsite portion of a buried telecommunications line and possible above-ground electrical service line on BLM land. The Project would also disturb approximately 154 acres of private lands that are under County jurisdiction and are adjacent to the BLM ROW grant boundary. The Project does not include any County real property or County right-of-way. 26-2

The Project is located within the Riverside East Solar Energy Zone ("SEZ"), which encompasses areas covered by the Northern and Eastern Colorado Desert Coordinated Management Plan ("NECO Plan"), and the California Desert Conservation Area ("CDCA"). Several solar power plants have already been approved for development in the SEZ, and other applications are still pending.[2] As each project is developed, the needs of each individual project will unavoidably tax limited water, land, and biological resources to a potentially significant cumulative extent. The final toll taken by this historic energy boom on California's desert environment, public health, and natural resource base may not be known for several years or longer, but the mounting evidence of detrimental impacts shows that the effects may be severe.

Information has long been available regarding the impacts that solar PV projects have on sensitive species, the strains that project development is having on the state's limited water and agriculture resources, and the impacts of long-term construction activities associated with large-scale solar. The Mojave Desert around the Project area has been approved for thousands of acres of solar development with little regard for the cumulative impacts these projects will have on the fragile desert ecosystem. Now, more than ever, it is essential that the County and BLM adequately identify and analyze the Project's foreseeable direct, indirect and cumulative impacts. It is also imperative that any and all feasible mitigation measures be presented and discussed. Indeed, CEQA and NEPA require nothing less. 26-2

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[1] Pub. Resources Code § 21000 et seq.

[2] Solar Energy Development Programmatic EIS, Riverside East, *available at* http://solareis.anl.gov/sez/riverside_east/index.cfm.

As explained below, the Project will generate a multitude of significant, unmitigated impacts to biological resources. The DEIR/S either mischaracterizes, misanalyses, underestimates, or fails to identify many of these impacts. The DEIR/S must be revised to resolve its inadequacies and must be recirculated for public review and comment.

CEQA requires recirculation of an EIR for public review and comment when significant new information is added to the EIR following public review, but before certification.[3] The CEQA Guidelines clarify that new information is significant if "the DEIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project or a feasible way to mitigate or avoid such an effect."[4]

The purpose of recirculation is to give the public and other agencies an opportunity to evaluate the new data and the validity of conclusions drawn from it.[5] As explained more fully below, the DEIR/S does not comply with the requirements of NEPA and CEQA because the DEIR/S (1) fails to set forth the environmental baseline for biological resources, and (2) fails to identify, analyze and mitigate to the extent feasible, all the impacts that the Project will have on biological resources. The County and BLM may not approve the Project until an adequate DEIR/S is prepared and circulated for public review and comment. 26-3

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[3] Pub. Resources Code § 21092.1.

[4] CEQA Guidelines § 15088.5.

[5] *Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (1981) 122 CalApp3d 813, 822.

We have reviewed the DEIR/S and its technical appendices with assistance from technical consultant Renee Owens of Sage Wildlife Biology.[6] Ms. Owens's comments, along with her *curriculum vitae*, are attached to this letter. We request that the BLM and the County include the entirety of these comments, including the attachments, in the record of proceedings for this Project. 26-3

I. STATEMENT OF INTEREST

Citizens for Responsible Solar is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The association includes Blythe residents and California Unions for Reliable Energy ("CURE") and its members and families and other individuals that live and/or work in Riverside County (collectively, "Citizens").

The individual members of Citizens and the members of the affiliated labor organizations live, work, recreate and raise their families in Riverside County. They would be directly affected by the Project's environmental and health and safety impacts. Individual members may also work constructing the Project itself. They will be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal interest in protecting the Project area from unnecessary, adverse environmental and public health impacts. 26-4

The organizational members of Citizens also have an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for the members that they represent. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for businesses to locate and people to live there. This, in turn, jeopardizes future development by causing construction moratoriums and otherwise reduces future employment opportunities for construction workers. The labor organization members of Citizens therefore have a direct interest in enforcing environmental laws to minimize the adverse impacts of projects that would otherwise degrade the environment. Finally, the organizational members of Citizens are concerned about projects that risk serious environmental harm without providing countervailing economic benefits. The CEQA and NEPA processes allow for a balanced consideration of a project's socioeconomic and environmental impacts, and it is in this spirit that we offer these comments. 26-4

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[6] Renee Owens, Sage Wildlife Biology March 5, 2019 Comment Letter ("Owens Letter") (Attachment A).

II. THE DEIR/S IS INCONSISTENT IN ITS ANALYSIS OF NEED AND COMPLIANCE WITH THE DRECP AND CDCA

The DEIR/S provides that the Project is located within the Development Focus Area and the Riverside East SEZ designated under the Desert Renewable Energy Conservation Plan ("DRECP"). The DRECP, issued in October 2016, amended the 1980 California Desert Conservation Area Plan as amended in 1999 ("CDCA"). However, according to the DEIR/S, the "new management prescriptions" of the DERCP don't apply to the Project's DEIR/S, because the Project was "[a] "pending" right-of-way (ROW) application under the Western Solar Plan and its location within a SEZ (DRECP Section II.3.2.4, p. 68-69)" and because "[t]he data collection, field surveys, and impact analyses for this EIS/EIR [were] based on BLM's requirements as of the date of the Notice of Intent" which was prior to the DRECP's framework being in place."[7] 26-5

While the DEIR/S purports to follow DRECP recommendations, the DEIR/S also states that it is not bound by the DRECP, and thus the BLM is not obligated to follow the Development Focus recommendations for this region, as dictated by the DRECP.[8] At the same time, the Project is bound to the CDCA Plan, as stated repeatedly in the DEIR/S, e.g. "[t]herefore, the Desert Quartzite Solar PV proposal is being processed under the CDCA land use plan."[9] Ms. Owens also notes that the "DRECP itself relies on equally conflicting statements regarding development of this region for renewable energy."[10]

In light of her analysis, Ms. Owens points out that "there are several directives of the CDCA that should be part of the Purpose and Need statement – and resultant analysis – that are missing or in conflict with the DEIR/S." Ms. Owens points out, as an example, that the Project "fails to meet" some of the

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[7] DEIR/S Appendix E-1.
[8] Owens Letter p. 2.
[9] *Id.*
[10] *id.*

Decision Criteria for the Energy Productions and Utility Corridors Elements of CDCA,[11] such as:

> 1. "Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors." The abundant and significant biological impacts to several thousand acres of public lands imposed by the Project could be avoided by using an Alternative that builds on energy storage or production from an existing project or other infrastructure.
>
> 2. "Avoid sensitive resources wherever possible." This goal is not being met based on the abundance of sensitive biological resources and high number of protected species that will be impacted as identified herein and by the DER/S, nor is it met by any environmentally superior Alternative.
>
> 3. "Consider wilderness values and be consistent with final wilderness recommendations." The DEIR/S states the Project will occupy approximately 3,770 acres, which amounts to almost 5.9 square miles. The solar arrays, buildings, transmission lines, roads, night lighting, and other anthropogenic constructs will be visible from adjacent wilderness and conservation areas and contribute to alterations in habitat and wildlife behavior and ecology of the area, undeniably resulting in degradation wilderness values, including the additional dust, light, and noise impacts during construction and decommissioning phases.[12]

Ms. Owens concludes that "the DEIR/S should reevaluate and rewrite the Purpose and Need statement to one that more closely represents environmental protections that are the primary responsibility of the BLM as land caretakers for the public…"[13]

26-5

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[11] BLM. (1999). The California Desert Conservation Area Plan 1980 As amended. U.S. DOI. p. 93 https://eplanning.blm.gov/epl-front-office/projects/lup/66949/82080/96344/CDCA_Plan.pdf.

[12] Owens Letter pp. 2-3.

[13] *Id., at* p. 3.

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III. THE DEIR/S FAILS TO ADEQUATELY ESTABLISH THE EXISTING BIOLOGICAL RESOURCES SETTING AGAINST WHICH IMPACTS SHOULD BE MEASURED

The DEIR/S describes the existing environmental setting inaccurately and incompletely, thereby skewing the entire impact analysis. The existing environmental setting is the starting point from which the lead agency must measure whether a proposed project may cause a significant environmental impact.[14] CEQA states the lead agencies should include a description of the physical environmental conditions in the vicinity of a project, as they exist at the time environmental review commences.[15] CEQA defines the environmental setting as the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, from both a local and *regional* perspective.[16] 26-6

Describing the environmental setting accurately and completely for each environmental condition in the vicinity of the Project is critical to an accurate, meaningful evaluation of environmental impacts. Courts are clear that, "[b]efore the impacts of a Project can be assessed and mitigation measures considered, an [environmental review document] must describe the existing environment. It is only against this baseline that any significant environmental effects can be determined."[17] In fact, it is:

> a central concept of CEQA, widely accepted by the courts, that the significance of a Project's impacts cannot be measured unless the DEIR first establishes the actual physical conditions on the property. In other words, baseline determination is the first rather than the last step in the environmental review process.[18]

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[14] *See, e.g., Communities for a Better Env't v. S. Coast Air Quality Mgmt. Dist.* (March 15, 2010) 48 Cal.4th 310, 316; *Fat v. County of Sacramento* (2002) 97 Cal.App.4th 1270, 1277 ("*Fat*"), citing Remy, et al., Guide to the Calif. Environmental Quality Act (1999), p. 165.

[15] CEQA Guidelines, § 15125(a); *see also Communities for A Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 321; *see also*, 40 C.F.R. § 1502.15.

[16] CEQA Guidelines §15125(a) (emphasis added); *Riverwatch v. County of San Diego* (1999) 76 Cal.App.4th 1428, 1453 ("*Riverwatch*").

[17] *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 952.

[18] *Save our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 125.

The DEIR must also describe the existing environmental setting in sufficient detail to enable a proper analysis of Project impacts.[19] Section 15125 of the CEQA Guidelines provides that "[k]nowledge of the regional setting is critical to the assessment of environmental impacts."[20] This level of detail is necessary to "permit the significant effects of the Project to be considered in the full environmental context."[21] 26-6

The description of the environmental setting in the DEIR/S is inadequate because it omits, or underestimates, highly relevant information regarding biological resources. The County must gather the relevant data and provide an adequate description of the existing environmental setting in a revised and recirculated DEIR/S.

A. The Project Fails to Describe the Existing Biological Resources Setting Against Which Impacts Should be Measured

a. *The DEIR/S Fails to Adequately Evaluate the Existing Setting for Birds and Bats*

The DEIR/S's description of the existing environmental setting as it concerns birds and bats is inadequate because the description of baseline conditions has not been established. The DEIR/S recognizes that there is a high likelihood that multiple bird and bat species use at the site, both as nesting and roosting habitat and as temporary habitat for migratory bird species,[22] and yet it fails to provide adequate data on the use levels of the site by birds and bats. Mitigation Measure WIL-6 requires the creation of a Bird and Bat Conservation Strategy ("BBCS").[23] In fact, in WIL-6, the DEIR/S implicitly states that there is no baseline data on birds and bats, stating in part: "Prior to the Notice to Proceed, the Applicant shall finalize and implement their draft BBCS to include the following: *Describe baseline* 26-7

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[19] *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist.* (1997) 60 Cal.App.4th 1109, 1122.
[20] CEQA Guidelines § 15125(c).
[21] *Id.*
[22] Owens Letter p. 7.
[23] Appendix G-33.

conditions for bird and bat species present within the Project site, including results of site-specific surveys."[24]

The mitigation measure includes only a bare outline of the types of actions that may result in mitigation of impacts, and what is more, it requires the plan to describe *future* baselines conditions, suggesting that baseline conditions in compliance with CEQA are absent. This is an impermissible deferral of establishing the existing baseline for biological resources and, thus, the DEIR/S violates CEQA. 26-7

b. *The DEIR/S Fails to Adequately Set Forth the Existing Setting for the Mojave Fringe-Toed Lizard (Uma scoparia)*

The DEIR/S's description of the existing environmental setting as it concerns Mojave Fringe-toed lizard ("MFTL") is deficient on three counts: 1) only a portion of Project site was surveyed, 2) not all the survey data are reported, and 3) the DEIR/S improperly assumes that failure to detect the species during the surveys is evidence of MFTL absence.

The DEIR/S describes the surveys for MFTL:

> Two preliminary baseline herpetofaunal investigations from October 22 to 23, 2012 and March 25 to April 12, 2013 and one visual encounter survey in Spring 2013 were completed on the portion of the Project site administered by BLM (i.e., 4,885 acres and additional buffer area). Herpetological surveys also included the 160-acre private inholding. Preliminary baseline herpetofaunal investigations consisted of walking belt transects approximately 10 meters wide to provide 100 percent coverage of the portion of the Project site administered by BLM. The visual encounter survey, which is a more intensive survey compared to baseline investigations, was performed along 12 transects (ten on-site and two in a one-mile buffer zone). Preliminary baseline herpetofaunal investigations and visual encounter surveys were not performed on the 160-acre private inholding. However, a habitat assessment of the

26-8

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[24] *Id.* (italics added.)

> inholding was conducted in Spring 2015 by walking 100 percent of the parcel.[25]

First, the surveys did not cover the entirety of project site, in that only "[a] *habitat assessment* of the inholding was conducted in Spring 2015 by walking 100 percent of the parcel."[26] A habitat assessment does not provide information on presence/absence of a species, but only whether the habitat is appropriate for that species. Therefore, the DEIR/S does not provide baseline data on the presence of MFTL within the inholding.

Second, the DEIR/S only reports the number of individuals noted during the herpatofaunal surveys,[27] but not how many individuals were noted during the preliminary baseline herpatofaunal investigations.

Third, Ms. Owens notes that MFTL is cryptic, blends in with the sand, and that individuals often burry themselves in the sand.[28] Ms. Owns states: 26-8

> [d]espite the Applicant conducting herpetofaunal surveys for the Project site six and seven years ago, it must be noted that "Visual Encounter Surveys" of transects can never completely provide an accurate census of an extremely difficult to detect species like the MFTL. Even when not hibernating, the animals are incredibly cryptic and spend a good deal of time buried under the sand for physiologic and behavioral reasons, including predator avoidance.[29]

Ms. Owens suggests that "[s]urveys of individuals not combined with a qualitative statistical estimate for occurrence," always underestimate numbers[30] and therefore lead to an inaccurate approximation of population size.

Thus, the DEIR/S fails to establish a complete and accurate existing environmental setting as it relates to MFTL.

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[25] DEIR p. 3.4-10.
[26] *Id.* (emphasis added).
[27] *Id., at* p. 3.4-11.
[28] Owens Letter p. 36.
[29] *Id.*
[30] *Id.*

c. *The DEIR/S Fails to Adequately Evaluate the Existing Setting for Foraging Eagles and Other Raptors on the Project Site*

The DEIR/S's description of the existing environmental setting as it concerns foraging eagles and other raptors is inadequate on two counts: 1) prey base is not accurately quantified, and 2) use of the site as foraging grounds is underestimated.

The DEIR/S states "Golden eagles need open terrain for hunting and prefer grasslands, deserts, savanna, and early successional stages of forest and shrub habitats. Golden eagles primarily prey on lagomorphs and rodents but will also take other mammals, birds, reptiles, and some carrion (Kochert et al. 2002)."[31] In evaluating the prey base for foraging golden eagles, the DEIR/S estimates that a total of 17 black-tailed jackrabbits were detected on the site, a density of approximately 0.0035 rabbits per acre, while a total count of cottontail rabbit was not conducted, and therefore cottontail a density estimate could not be established.[32] Ms. Owens explains that: 26-9

> [t]his survey is extremely poorly described in scope and methodology, and as such clearly cannot represent a census or any other sort of scientific estimate that is appropriate for determining abundance, site use, and/or density of jackrabbits (or cottontails) inhabiting the Project site as a primary prey item for not only golden eagles but other species as well, including red-tailed hawks and kit foxes.

Ms. Owens recommends that new prey distributions be assessed with new surveys, because the low level of use by golden eagles and other raptors cannot be predicted from these data,[33] leading to an inaccurate evaluation of the existing setting.

Also, the proximity of foraging habitat near the project site, in addition to historic data on the presence of raptors in the area, shows a moderate to high likelihood that the Project site would be used for foraging by raptors, and that [t]he Project site may cause significant indirect impacts to foraging eagles and other 26-10 raptor species, contrary to the assumptions made by the DEIR/S that are not supported by substantial evidence."[34] 26-10

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[31] DEIR/S p. 3.4-14.
[32] DEIR/S p. 3.4-14.
[33] Owens Letter p. 40.

For these reasons, the DEIR/S fails to establish a complete and accurate existing environmental setting as it relates to raptors.

d. The DEIR/S Fails to Adequately Evaluate the Existing Setting for Special Status Species

The DEIR/S's description of the existing environmental setting as it concerns special status species is inadequate because many special-status species are omitted from the analysis.

The DEIR/S provides Table 3.4-1, listing special-status species that have the potential to occur within the study site.[35] However, DEIR/S survey results show the presence of several special-status species that were not included in table 3.4-1, and were therefore not analyzed.[36] Such an omission is "a serious oversight on the part of the DEIR/S." Since it is very likely that these often migratory species, while not breeding or making use of the foraging habitat on a regular basis, need to be considered by the EIR/S.[37] The absence of these species from any discussion in the DEIR/S fails to establish a complete and accurate existing environmental setting as it relates to these special-status species. 26-11

IV. THE DEIR/S LACKS SUBSTANTIAL EVIDENCE TO SUPPORT THE DEIR/S'S SIGNIFICANT IMPACT FINDINGS AND THE DEIR/S FAILS TO INCORPORATE ALL FEASIBLE MITIGATION MEASURES NECESSARY TO REDUCE SUCH IMPACTS TO A LESS THAN SIGNIFICANT LEVEL

26-12

CEQA has two basic purposes, neither of which the DEIR/S satisfies. First, CEQA is designed to inform decision makers and the public about the potentially significant environmental impacts of a Project before harm is done to the environment.[38] The DEIR is the "heart" of this requirement.[39] The DEIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."[40]

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[34] *id.*
[35] DEIR/S p. 3.4-4.
[36] Owens Letter p. 29.
[37] *id.*

To fulfill this function, the discussion of impacts in a DEIR must be detailed, complete, and "reflect a good faith effort at full disclosure."[41] An adequate DEIR must contain facts and analysis, not just an agency's conclusions.[42] CEQA requires a DEIR to disclose all potential direct and indirect significant environmental impacts of a project.[43] 26-12

Second, if a DEIR identifies potentially significant impacts, it must then propose and evaluate mitigation measures to minimize these impacts.[44] CEQA imposes an affirmative obligation on agencies to avoid or reduce environmental harm by adopting feasible project alternatives or mitigation measures.[45] Without an adequate analysis and description of feasible mitigation measures, it would be impossible for agencies relying upon the DEIR to meet this obligation.

Under CEQA, a DEIR must not only discuss measures to avoid or minimize adverse impacts, but must ensure that mitigation measures are fully enforceable through permit conditions, agreements, or other legally binding instruments.[46] A CEQA lead agency is precluded from making the required CEQA findings unless the record shows that all uncertainties regarding the mitigation of impacts have been resolved; an agency may not rely on mitigation measures of uncertain efficacy or feasibility.[47] This approach helps "insure the integrity of the process of decision by precluding stubborn problems or serious criticism from being swept under the rug."[48]

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[38] CEQA Guidelines § 15002(a)(1); *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal.App.4th 1344, 1354 ("*Berkeley Jets*"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[39] *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 84.
[40] *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[41] CEQA Guidelines § 15151; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 721-722.
[42] See *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 568.
[43] PRC § 21100(b)(1); CEQA Guidelines § 15126.2(a).
[44] PRC §§ 21002.1(a), 21100(b)(3); CEQA Guidelines § 15002(a)(2) and (3); *Berkeley Jets*, 91 Cal.App.4th at 1354; *Laurel Heights Improvement Ass'n v. Regents of the University of Cal.* (1998) 47 Cal.3d 376, 400.
[45] PRC §§ 21002-21002.1.
[46] CEQA Guidelines, § 15126.4, subd. (a)(2).

In this case, the DEIR/S fails to satisfy the basic purposes of CEQA. The DEIR/S conclusions regarding impacts to biological resources are not supported by substantial evidence. In preparing the DEIR/S, the applicant: 1) failed to provide sufficient information to inform the public and decision-makers about potential environmental impacts; 2) failed to accurately identify and adequately analyze all potentially significant environmental impacts; 3) failed to incorporate adequate measures to mitigate environmental impacts to a less than significant level; and 4) failed to analyze impacts associated with mitigation measures. The applicant must correct these shortcomings and recirculate a revised DEIR/S for public review and comment. 26-12

A. The DEIR/S Fails to Adequately Analyze and Mitigate Significant Impacts to Bats

The DEIR/S analysis of impacts and mitigation measures on bats is inadequate for two reasons: 1) it fails to consider impacts to bats caused by lighting, and 2) it fails to describe the mitigation compensation for loss of foraging and roosting habitat for bats.

First, the DEIR/S is inconsistent in regards to the amount of light that the project would create. The DEIR/S recognizes the fact that the pallid bat, Townsend's big-eared bat, Western mastiff bat, pocketed free-tailed bat, California leaf-nosed bat, and the cave myotis, all use the site.[49] On one hand, the DEIR/S recognizes that additional light for site security will be provided "24 hours per day, 7 days per week, through a combination of the fencing, lighting…Night lighting would be provided at the O&M building, the On-Site Substation, the temporary construction staging areas, and on or near each PCS station,"[50] as well as nighttime lighting "during 26-13 construction and decommissioning."[51] On the other hand, the DEIR/S concludes that "[b]ased on the relatively undeveloped nature of the surrounding landscape, there are very few sources of light associated with the Project area. The primary source of light and glare in the area is motor vehicles traveling on surrounding roadways and from residences in Nicholls Warm Springs/Mesa Verde."[52] Thus, the DEIR/S is inconsistent in regards to the amount and location of light impacts to bats from the Project.

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[47] *Kings County Farm Bur. v. County of Hanford* (1990) 221 Cal.App.3d 692, 727-28 (a groundwater purchase agreement was inadequate mitigation because there was no record evidence that replacement water was available).
[48] *Concerned Citizens of Costa Mesa, Inc. v. 32nd Dist. Agricultural Assn.* (1986) 42 Cal.3d 929, 935.
[49] Owens Letter p. 7.
[50] DEIR/S p. 2-10.

Second, the DEIR/S recognizes that the increased night lighting could impact bats "including alteration of foraging and breeding behavior."[53] The DEIR/S uses mortality observations at other, nearby, solar facilities as the only measure of impacts on bats. However, many additional sources can impact bats in more ways than by causing only mortality: 26-13

> Project impacts from night lighting, habitat loss and fragmentation, fugitive dust, predator attraction, etc., throughout almost 6 square miles of the proposed project development footprint could cause changes in foraging and breeding that may result in increased competition, predation, and overall reduced fecundity and viability that could impact bats at the subpopulation level, and at yet not be observable as mortalities onsite.[54]

Regarding describing impacts to roosting and foraging habitat for bats, the DEIR/S does not provide sufficient information to assess compensatory mitigation.[55] The DRECP, which the DEIR/S follows (see discussion above) provides guidelines on the evaluation and description of compensatory mitigation for bats.[56] However, the "DEIR/S does not provide the necessary information, analysis, or relevant discussion to begin to assess compensatory mitigation as described [by the

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[51] Owens Letter p. 17.
[52] DEIR/S p. 3.19-2.
[53] Owens Letter p. 17.
[54] *id.*
[55] *id.*
[56] DRECP EIR/EIS Appendix H.3.3 https://www.fws.gov/carlsbad/PalmSprings/DRECP/Appendix%20H_Conservation%20and%20Management%20Actions%20Documentation/Appendix%20H_CMAs%20Documentation.pdf

DRECP]."[57] As such, any mitigation measures for bats will be insufficient to reduce impacts to levels below significance.[58] 26-13

B. Impacts to Birds from Collisions to Facilities are Underestimated and Ignored, Resulting in Unmitigated Significant Impacts to Sensitive and Protected Bird Species

The DEIR/S analysis of collision impacts and mitigation measures on birds is inadequate for three reasons: 1) the mitigation proposed fails as actual mitigation, 2) it underestimates collision impacts leading to under-mitigation and, 3) it lacks substantial evidence to support its conclusion that bird mortality from collisions is unsupported by available data.

First, as noted in these comments, the DEIR/S fails to provide adequate mitigation for significant impacts to birds. Mitigation measure WIL-6 proports to address impacts to birds and bats but defers preparation of the BBCS to the future. As part of the future mitigation, the BBCS states mitigation will "[m]onitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), **and the solar field**."[59] and that the monitoring data will inform future management programs.[60] However, monitoring in and of itself "does not mitigate actual harm, injury, or death to individuals in any way, so should not be categorized as actual mitigation."[61] Actual mitigation is intended to reduce impacts resulting from the project, and mitigation measures should be specific enough to allow evaluation of the efficacy of proposed mitigation measures. In this case, it is clear that while monitoring is an important part to any management program, it is not mitigation in itself. 26-14

Second, Ms. Owens cites the comment letter submitted in response to the DEIR by the US Fish and Wildlife Service ("USFWS"),[62] highlighting the impacts of solar fields on migratory birds. The USFWS letter points out that:

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[57] Owens Letter p. 19.
[58] *id., at* p. 20.
[59] DEIR/S Appendix G-34. (emphasis added).
[60] *id.*
[61] Owens Letter p. 20.
[62] *id.*

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> in the draft EIS/EIR, post-construction avian mortality monitoring from nearby utility-scale solar facilities has documented bird fatalities. However, the avian mortality monitoring data described in the draft EIS/EIR only considers raw data that are not corrected for searcher efficiency and carcass persistence. These data are useful for considering which project features are associated with mortalities, but do not provide a good metric for evaluating the total impact to migratory bird species.[63]

The letter goes on to recommend that the Final EIR/S provide data that accounts for searcher bias and rates of carcass removal and a "more accurate cumulative evaluation of effects to migratory birds."[64] Ms. Owens agrees with the assessment of USFWS, concluding that impacts to birds are underestimated, and thus remain unmitigated to a less than significant level.[65] 26-14

Lastly, the DEIR/S fails to support its assertion that solar fields do not impact migratory birds. The DEIR/S states:

> A potential risk to migrating birds is associated with Polarized Light Pollution (PLP), which creates the "lake effect" in which PV panels may mimic the reflective and light polarizing characteristics of water. Migrating water birds may mistake fields of PV panels as water bodies, and consequently be attracted to them. The lake effect has recently been postulated as a causal factor in injuries and mortalities of water birds at some solar facilities in the California Desert. Migrating birds may attempt to land on what they perceive as water, and instead collide with solar panels or other structures, resulting in injury or death. Additionally, some water birds require a running start

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[63] USFWS. (Nov 8, 2018) Comment Memorandum on the Draft Environmental Impact Statement for the Desert Quartzite Solar Project, Riverside County, California (CACA-49397). https://eplanning.blm.gov/epl-front-office/projects/nepa/68211/166320/202702/Indexed_DQSP_Comment_24_11-8-2018_USFWS_508.pdf p. 3.

[64] *id.*

[65] Owens Letter p. 28.

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across a water surface to take off. If these birds successfully land at the solar facility, they will be unable to take off again.[66]

However, the DEIR/S argues that impacts of solar fields on birds are not supported by sufficient evidence, stating: "[a]vailable information is not sufficient to allow quantification of the potential hazard of glare. Forecasting the importance of PLP to the survival of avian populations and the integrity and function of ecosystems remains largely speculative (Horvath et al. 2009)."[67]

26-14

To the contrary, there is ample scientific evidence to support the conclusion that birds do collide with reflective solar panel arrays, associated transmission lines, and other structures associated with industrial solar facilities, and Ms. Owens cites 9 nine sources for that substantial evidence.[68] Ms. Owens concludes that the studies cited "[p]rovide conclusive evidence that the risks of PV panel avian collisions are real, significant, have been observed by scientific methodologies incorporated into bird and bat monitoring protocols, and quantifiable to the extent required for estimating compensatory mitigation needs."[69]

The foregoing clearly illustrates that the DEIR/S fails to mitigate impacts to sensitive and protected bird species to less-than significant levels.

C. Mitigation Protocols for Nesting Birds are Inappropriately Deferred and Inadequate

The DEIR/S fails to provide appropriate mitigation protocols for several reasons, including: 1) contradicting measures, 2) inappropriate triggers for management, 3) inappropriate reporting, 4) inappropriate buffer zones, and 5) underestimation and inadequate environmental impact analysis.

26-15

First, Mitigation Measures VEG-8 and WIL-7 can create confusion. Mitigation Measure VEG-8 is unclear in that it lists triggers that "shall be evidence of Project-related disturbance" and includes agitated behavior, increased vigilance behavior, and changes in foraging or feeding behavior, or nest abandonment.

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[66] DEIR/S p. 4.4-12.
[67] *id.*
[68] Owens Letter pp. 22-27.
[69] *id., at* p. 27.

However, the measure leaves unclear what would happen to a nest if none of the triggers listed are encountered.

Mitigation measure WIL-7 provides in part:

> Pre-construction surveys for nesting birds shall be conducted within a 14-day period preceding initiation of grading or mowing activity. Workers shall be trained in the WEAP training to identify and report nests in active construction areas...If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the qualified biologist) and monitoring plan shall be developed...the qualified biologist shall monitor the nest until he or she determines that nestlings have fledged; activities that might, in the opinion of the monitors, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made.[70]

26-15

The measure is unclear as to whether biologists, workers, or both, will be the "monitors" detecting nests, and at what time intervals after commencement of construction the nesting birds will be monitored throughout construction.[71]

Second, the "triggers for management" provided in VEG-8 are "inappropriate since they are based upon behavioral responses indicating negative impacts that are already occurring/ have occurred." Also, it would be too late to mitigate for such impacts since, for example, disruption to mating, foraging, or nesting behavior may have already occurred.[72] As Ms. Owens notes, "[o]ne cannot rely on birds overtly expressing behavioral indications leading to reduced reproductive success in a manner readily detected by a biologist observing them."[73]

Third, the reliance on trained employees to accurately evaluate wildlife conditions is misplaced.[74] For one thing, the Worker Environmental Awareness Program ("WEAP") program provided in Mitigation Measure VEG-6 has not yet been designed – which means that the details are missing. The DEIR/S provides that "[t]he WEAP shall be submitted to the BLM and County for approval prior to the start of ground disturbance and issuance of a County grading permit."[75] This is yet another example of deferred mitigation, denying appropriate evaluation by decision-makers and the public. Further, the WEAP's requirements and rigor are undefined since the WEAP, as described in the DEIR/S, is a very limited outline of the types of actions needed to be implemented without any detail. For example, it is not clear whether the awareness program training will be a one-day, or multi-day program, who will conduct it, and which employees will qualify to undertake it.

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[70] Appendix G-34-35.
[71] Owens Letter p. 9.
[72] *id., at* p. 10.
[73] *id.*
[74] *id.*

Further, the Mitigation Measure provides "[t]he specific program *can* be administered by a competent individual(s)," (italics added) but does not define who a "competent individual" is. Use of the term "can" in describing who will administer the program leaves that decision to the applicant's discretion, where the applicant may decide that a person other than a "competent individual," however defined, may administer the program. Lastly, as Ms. Owens points out "mitigation of impacts should never rely on non-biologists to detect or report nests or any other aspect of onsite birds, regardless of any training or not."[76] 26-15

Fourth, Mitigation Measure WIL-7 provides "[i]f active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the qualified biologist) and monitoring plan shall be developed."[77] Ms. Owens points out the risks and issues with having a project-hired staff biologist set the buffer zones for nesting birds, noting that "buffer zones of avoidance should be determined with confirmation of a USFWS or CDFW biologist and not left the subjective determination of a biologist hired by the developer as would be the case described in WIL-7." Ms. Owens also explains that "[t]he buffers should always be determined by USFWS or CDFW, at a minimum for every species protected by the ESA, CESA, MBTA, and Eagle Act."[78]

Fifth, in the context of nesting bird mitigation, Ms. Owens reiterates the deficiencies in the DEIR/S regarding underestimation and minimization of impacts

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[75] Appendix G-7.
[76] Owens Letter p. 10.
[77] Appendix G-35.
[78] Owens Letter p. 10-11.

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of solar projects on birds and emphasizes that this issue also applies to nesting birds.[79] Ms. Owens goes on to share her personal observations in desert solar facilities of ground nesting birds, that normally nest in bare or rocky ground, sand or soils, making use of the "shaded microhabitats underneath and bordering the solar panel arrays."[80] Ms. Owens notes that this widespread phenomenon has been under-reported, and has not been described in peer reviewed literature, which is why "[m]itigation must include professional, statistically significant mitigation monitoring throughout the life of the Project, conducted by biologists, not site personnel."[81] 26-15

The foregoing discussion makes it clear that the DEIR/S does not provide sufficiently detailed mitigation measures to reduce significant impacts to nesting birds, and impermissibly defers mitigation to the future. The DEIR/S is thereby inconsistent with CEQA requirements, and must be revised and recirculated.

D. The DEIR/S Fails to Provide Definite and Timely Mitigation Measures

i. Various Mitigation Plans for Protected Species and Entire Taxa Deferred to Future

The DEIR/S fails to develop sufficiently detailed wildlife mitigation measures to allow appropriate review by decision makers and the public. Section 2.3.7.5 of the DEIR/S states that the Applicant will "develop and implement a variety of management plans and procedures for protection and mitigation of impacts to wildlife."[82] These mitigation plans and procedures include the BBCS, California burrowing owl mitigation measures based upon California Burrowing Owl Consortium guidelines, and mitigation measures to reduce potential for electrocution, collision, and nesting/perching by migratory birds on overhead power lines, based on APLIC guidelines.[83] The DEIR/S summarizes other mitigation measures by stating that additional plans will be developed including a Mojave 26-16

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[79] *id., at* p. 11.
[80] *id., at* p. 11-12, citing Owens, R. (December 2016). The Unpleasant Secrets of Clean Solar Energy. The Desert Report. http://www.desertreport.org/wp-content/uploads/2016/12/DR-Winter2016.pdf.
[81] Owens Letter p. 12.
[82] DEIR/S p. 2-25.
[83] Owens Letter p. 5.

Desert Tortoise Mitigation Plan, a Raven Management Plan, a Desert Kit Fox and Badger Management Plan, a Vegetation Resources Management Plan ("VRMP"), a Biological Resources Mitigation, Implementation and Monitoring Plan, a Worker Environmental Awareness Plan, and that, prior to construction, the requirements of all of the management plans and mitigation measures associated with wildlife protection would be incorporated into a Worker Environmental Awareness Program ("WEAP").[84]

26-16

The DEIR/S claims to provide further detail to these measures in Appendix G, however the details are "[n]ot the type necessary for satisfactory baseline analysis of the efficacy of these theoretical, unscripted plans to truly mitigate significant impacts to species and habitats."[85] Furthermore, the details to be developed for the measures proposed in the DEIR/S "are being based largely upon anticipation of a future direction by various unnamed experts – or simply administrators – to be determined." [86] This type of deferral prevents reviewers from assessing the efficacy and impacts of the proposed mitigation measures and "[i]t leaves the process vulnerable to the whims, bias, and conflicts of the permittees as well as to litigation and other interruptions that can lead to mitigation failure and disruptions of the permitting processes."[87]

Thus, by deferring specifics on mitigation measures, and placing the authority of developing these details in the hands of unknown experts and administrators, the DEIR/S fails to comply with CEQA.[88]

ii. Mitigation Measures are Absent or Deferred, Resulting in Unmitigated Significant Impacts to Birds and Bats

26-17

The DEIR/S, in concert with the DRECP model cited in the DEIR/S, indicates the presence and high likelihood of occurrence of a high number of protected and sensitive bird and bat species, including the golden eagle, western burrowing owl,

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[84] *id.*
[85] *id.*
[86] *id., at* p. 6.
[87] *id.*
[88] PRC §§ 21002.1(a), 21100(b)(3); CEQA Guidelines § 15002(a)(2) and (3); *Berkeley Jets*, 91 Cal.App.4th at 1354; *Laurel Heights Improvement Ass'n v. Regents of the University of Cal.* (1998) 47 Cal.3d 376, 400.

Cooper's hawk, ferruginous hawk, Swainson's hawk, Vaux's swift, Northern harrier, peregrine falcon, loggerhead shrike, Le Conte's thrasher, pallid bat, Townsend's big-eared bat, Western mastiff bat, pocketed free-tailed bat, California leaf-nosed bat, and the cave myotis.[89]

As noted prior, Appendix G of the DEIR/S contains mitigation measures. Measure WIL-6: BBCS states:

> **Prior to the Notice to Proceed, the Applicant shall finalize and implement their draft BBCS to include the following:**
> - Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys.
> - Assess potential risk to bird and bats based on the proposed activities.
> - Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species.
> - Describe the incidental monitoring and reporting that will take place during construction.
> - Provide details for avian and bat post-construction monitoring and reporting.
> - Specify the adaptive management process that will be used to address potential adverse effects on these species.
> - Monitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field.
> - The monitoring data shall be used to inform a management program that would avoid and minimize Project-related avian and bat impacts. The study design shall be approved by the BLM AO in consultation with USFWS, and shall be incorporated into the Project's Biological Resources Mitigation, Implementation, and Monitoring Plan (BRMIMP; see Mitigation Measure VEG-7) and implemented.
> - Post-construction mortality monitoring will be required for a minimum of two years, including the following project components: PV solar panel arrays (40% survey coverage per year), perimeter fencing (100%

26-17

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[89] Owens Letter p. 7.

survey coverage per year), and the gen-tie line (50% survey coverage per year).[90]

26-17

It is crucial to note that the DEIR/S requires the BBCS to be completed "[p]rior to the Notice to Proceed," which means that these mitigation measures are not fully detailed in the DEIR/S. Ms. Owens states that while the details to be finalized are important for a monitoring and mitigation plan:

> [t]he lack of detail about these types of data in the DEIR/S precludes comprehensive and thus accurate analysis of mitigation measures and their resultant efficacy. Descriptions including baseline conditions, potential risks, specific conservation measures relevant to different rare and unique species are all details that should be included in the DEIR/S's explanation of how impacts will be mitigated; they must be provided prior to issuance of the development approval, not after." and "[t]his deferral to the future is inadequate for thorough impact mitigation analysis and results in impacts remaining unmitigated.[91]

Because CEQA requires that mitigation measures be sufficiently detailed to allow appropriate review of the project's impacts, and this mitigation measure fails to provide sufficient details, the DEIR/S fails to comply with CEQA.

E. The Information Provided For Compensatory Mitigation Is Vague and Inadequate

26-18

CEQA requires that mitigation be provided to reduce significant project impacts to levels below significance. CEQA recognizes that compensatory measures can act as mitigation including "[b]y replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements."[92]

The DEIR/S fails to provide adequate compensatory mitigation measures in two ways: 1) by impermissibly deferring details, and 2) providing vague selection criteria, and denying decisionmakers and the public review of these criteria.

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[90] Appendix G-33 (emphasis in original).
[91] Owens Letter p. 8.
[92] Pub Res Code § 15370, subd. (e).

For example, in the DEIR/S's analysis of cumulative impacts to special status plant species, a source of mitigation includes compensatory mitigation.[93] However, mitigation measure VEG-9 states:

> *Prior to the start of ground disturbance and issuance of a County grading permit*, the Applicant shall prepare and implement a [Vegetation Resources Management Plan] that meets the approval of BLM AO and Riverside County. The Plan shall ensure adequate special-status plant surveys and reporting, avoidance of and mitigation for impacts to special-status plants, and funding or support of a compensatory mitigation program for state or Federally listed species through land acquisition, restoration/enhancement, or a combination of acquisition and restoration/ enhancement.[94]

The requirement that the Vegetation Resources Management Plan be provided in the future, is once again, impermissible deferral of mitigation measures. 26-18

In addition, mitigation measure VEG-9C states "[t]he Applicant shall fund activities that the BLM Authorize Officer ("AO") requires for the initial protection and habitat improvement of the compensation lands." [95] However, the DEIR/S does not describe what these activities are, as they have not yet been determined. Furthermore, the estimated cost per acre of any such lands is based on the "[e]stimated cost per acre for Mojave desert tortoise mitigation as the best available proxy."[96] Using the desert tortoise habitat as a proxy is problematic, because it only estimates compensatory mitigation costs for one species, whereas compensatory costs for a suite of species and their habitat requirements could be higher.[97] In addition, the cost per acre cannot not take into account the total cost of habitat disturbance or destruction resulting from the Project because the footprint of the project has not been absolutely determined.[98]

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[93] DEIR/S p. 4.3-20.

[94] Appendix G p. G-12. (emphasis added)

[95] Appendix G-17.

[96] Appendix G-17.

[97] Owens Letter p. 13.

[98] *id.*

Furthermore, Mitigation Measure VEG-9 provides that the type and location of compensatory mitigation is to be evaluated by the Applicant or one of few other personnel.[99] For example, the proposal to acquire lands for compensatory mitigation is to be submitted to the BLM AO,[100] who would decide what kind, and location, of compensatory mitigation is appropriate; a decision inappropriate for "[j]ust the BLM AO or a few other personnel."[101] Further, the DEIR/S's selection criteria for land acquisition for compensatory mitigation are "misleading and vague," lacking quantitative benchmarks, and described as

> [l]and that may be (a) occupied by "the species" and is "of equal or better habitat quality than that of the affected occurrence," (b) is degraded by impacts such as ORVs, ranching, or invasive plants and thus will be enhanced or restored by an as of yet unscripted Plan; or is (c) habitat that does not even host the target species to be mitigated, but may be bordered by "occupied" habitat and may accompanied by restoration 'efforts'.[102]

26-18

These criteria do not provide a decision-making process where one option is better than another. As explained by Ms. Owens:

> [t]hese are not quantitative criteria but descriptors of indeterminate compensatory lands, with no actual criteria given for why options b or c would be chosen since they would certainly require greater cost, time, and effort to achieve status as being truly compensatory to degraded and developed habitat and the protected species the habitat supports, not to mention they may be wholly or partly non-representative of migratory species that may be impacted but are not represented by onsite habitat. For instance, compensatory mitigation for impacts to migratory species that breed in non-desert habitat may involve an alternative type of compensation such as contributing conservation funds to MBTA species protections unrelated to desert land acquisition or restoration.[103]

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[99] Appendix G-12.
[100] Appendix G-17.
[101] Owens Letter p. 13-14.
[102] *id., at* p. 14.
[103] Owens Letter p. 14.

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In addition, the measure provides that the Applicant shall comply with other requirements related to the purchase of compensatory mitigation, including the criteria used for selection of acquisition lands.[104] However, the subsection providing these selection criteria states, "[t]he compensation lands selected for acquisition *may* include any of the following three categories…"[105] Thus, the measures leaves it to the discretion of the Applicant whether to follow these criteria, or ignore them completely, rendering the criteria as mere guidelines, as opposed to requirements for selection of compensatory land.[106] Ms. Owens emphasizes that compensatory mitigation strategies can be more successful at reaching performance when performance standards are provided with detail for public review.[107] Indeed, this is what CEQA requires. 26-18

Thus, by deferring details of, and providing vague guidelines to, mitigation measures, the DEIR/S fails to provide feasible, enforceable mitigation to reduce impacts to less than significant levels.

F. The Alternatives Presented Do Not Put Forth the Most Environmentally Superior Project

The DEIR/S fails to comply with CEQA's requirement to adopt feasible project alternatives or mitigation measures.[108]

The Project could avoid or reduce impacts to biological resources, while still meeting the "community renewable energy needs that this project purports to address."[109] Ms. Owens identifies the use of a distributed renewable energy source in the form of rooftop solar on existing buildings as one such alternative. Ms. Owens points out that this "[a]lternative would clearly reduce or eliminate the development and degradation of native habitats on public lands, and could reduce transmission costs by reducing the need, and extent, of additional transmission lines required for Projects like this one." Further, this alternative would greatly reduce the cost of the 26-19 project by reducing the need for both on-site, and compensatory, mitigation.[110] Finally, a combination of rooftop solar and development of already degraded parcels would also reduce the Project's impacts, while still meeting the goals of the Project.[111] 26-19

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[104] Appendix G-15-16.
[105] Appendix G-16 (emphasis added).
[106] Owens Letter p. 14.
[107] *id.*
[108] PRC §§ 21002-21002.1.
[109] Owens Letter p. 3.

V. CONCLUSION

The Project presents significant environmental impacts that the County failed to address in the DEIR/S, which must be disclosed, analyzed and mitigated in a revised DEIR/S prior to Project approval. The DEIR/S fails to adequately establish the existing setting upon which to measure impacts to biological resources. For some species that may be impacted by the Project, the DEIR/S fails to conduct an analysis of potentially significant impacts. The DEIR/S also fails to include an adequate analysis of and mitigation measures for the Project's potentially significant impacts that it does purport to analyze. The DEIR/S improperly defers the identification of mitigation for significant impacts. Finally, the DEIR/S's conclusions lack substantial evidence, as required by CEQA. Due to these significant deficiencies, a revised DEIR/S that addresses these inadequacies must be recirculated. 26-20

Sincerely,

Yair Chaver

YC:acp

Attachment

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[110] *id.*, *at* p. 3-4.
[111] *id.*

ATTACHMENT A

Renee Owens, M.S. - Biologist and Independent Environmental Consultant

March 5, 2019

Yair Chaver

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Subject: Comments for the Draft Plan Amendment / Draft Environmental Impact Report / Draft Environmental Impact Statement (DEIR/S) for the Desert Quartzite Solar Project

Dear Mr. Chaver,

This letter contains my comments on the biological resource impact analysis for the Draft Plan Amendment / Draft Environmental Impact Report / Draft Environmental Impact Statement for the Desert Quartzite Solar Project. For the reasons outlined herein, the Desert Quartzite Solar Project (Project) Draft Plan Amendment / Draft EIR /Draft EIS (DEIR/S) fails to meet the requirements of impact analysis and mitigation under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). 26-21

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The proposed Project would be located approximately 2.75 miles southwest of the City of Blythe, just south of the Interstate 10 (I-10) freeway, and 1.5 miles southwest of the Blythe Airport in Riverside County, California. First Solar Development LLC (Applicant) as prepared an EIR/S as partial fulfillment of their application requirements for CEQA and NEPA, submitted to the Bureau of Land Management (BLM) and Riverside County planning department (the Agencies), for the construction, operation, and decommissioning of a photovoltaic (PV) solar facility, Desert Quartzite, on public (approximately 5,115 acres) and private (160 acres) lands totaling approximately 5,275 acres. The proposed Project includes 61 acres of construction impacts on BLM land.

I. THE DEIR/S IS INCONSISTENT IN ITS ANALYSIS OF NEED AND COMPLIANCE WITH THE CDCA

26-22

The Project is located within the Development Focus Area and the Riverside East Solar Energy Zone designated under the Desert Renewable Energy Conservation Plan (DRECP). However, according to the DEIR/S, the Project (a.k.a. "DQSP") does not fall within management prescriptions of the DRECP because according to the DRECP, "renewable energy applications in the Riverside East Solar Energy Zone filed before June 30, 2009, including the application for DQSP, are not, and will not be, subject to the terms of the DRECP. The DRECP recognizes that the DQSP would not be subject to the DRECP due to its status as a "pending" right-of-way (ROW) application under the Western Solar Plan and its location within a SEZ (DRECP Section II.3.2.4, p. 68-69); and the data collection, field surveys, and impact analyses for this EIS/EIR are based on BLM's requirements as of the date of the Notice of Intent, which was on March 6, 2015. The DRECP's designations and classifications were not issued until 18 months later."[1]

Since the Project is not beholden to the DRECP, it follows that due to the many environmental impacts this Project will impose on biological resources, the Bureau of Land Management (BLM) is not obligated to follow the Development Focus recommendations for this region as dictated by the DRECP. However, the DEIR/S proposes to follow DRECP recommendations while concurrently stating they are not beholden to its prescriptions, and it should be noted that the DRECP itself relies on equally conflicting statements regarding development of this region for renewable energy: The DRECP includes the Project site in its Development Focus Area, and yet concurrently states its Objectives goals to "maintain habitat and landscape connectivity" while avoiding disturbance of sand transport corridors, including to "conserve the geomorphic (fluvial, alluvial, and Aeolian) processes associated with sand dune formation and the sand transport corridors between the sand dunes and their sand sources, and to conserve or increase protective management to prevent structures capable of obstructing sand movement, within sand transport areas."[2] Additionally, based upon a vague mention of the BLM's "multiple use mandate", as part of its statement of Purpose and Need, the DEIR/S reiterates Executive Orders 13783 and 13807, and Secretary Orders 3349 and 3355 that seek to prioritize energy development and to "streamline" environmental review.[3] However, the DEIR/S does not represent Order 3355 prescriptions regarding length and timelines, and is neither beholden to these Executive or Secretary Orders by default. Therefore, the DEIR/S inappropriately emphasizes economic concerns where instead environmental analyses and protections should be prioritized for this document and Project. 26-22

The Project is, however, beholden to the California Desert Conservation Area (CDCA) Plan, as stated repeatedly in the DEIR/S, i.e. "Therefore, the Desert Quartzite Solar PV proposal is being processed under the CDCA land use plan."[4] In light if this it is important to note that there are several directives of the CDCA that should be part of the Purpose and Need statement – and resultant analysis – that are missing or in conflict with the DEIR/S. For example, the Project fails to meet the following Decision Criteria for the Energy Productions and Utility Corridors Elements:[5]

1. "Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors."

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[1] DEIR/S Appendix E-1

[2] BLM. (September 2016). Land Use Plan Amendment to the California Desert Conservation Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan. p. 72 retrieved from: https://www.drecp.org/finaldrecp/lupa/DRECP_BLM_LUPA.pdf

[3] DEIR/S p. ES-3-4

[4] *Ibid*. p. 1-11

[5] BLM. (1999). The California Desert Conservation Area Plan 1980 As amended. U.S. DOI. p. 93 https://eplanning.blm.gov/epl-front-office/projects/lup/66949/82080/96344/CDCA_Plan.pdf

The abundant and significant biological impacts to several thousand acres of public lands imposed by the Project could be avoided by using an Alternative that builds on energy storage or production from an existing project or other infrastructure.

2. “Avoid sensitive resources wherever possible.” This goal is not being met based on the abundance of sensitive biological resources and high number of protected species that will be impacted as identified herein and by the DER/S, nor is it met by any environmentally superior Alternative.

3. “Consider wilderness values and be consistent with final wilderness recommendations.” The DEIR/S states the Project will occupy approximately 3,770 acres, which amounts to almost 5.9 square miles. The solar arrays, buildings, transmission lines, roads, night lighting, and other anthropogenic constructs will be visible from adjacent wilderness and conservation areas and contribute to alterations in habitat and wildlife behavior and ecology of the area, undeniably resulting in degradation wilderness values, including the additional dust, light, and noise impacts during construction and decommissioning phases.

As such, the DEIR/S should reevaluate and rewrite the Purpose and Need statement to one that more closely represents environmental protections that are the primary responsibility of the BLM as land caretakers for the public; a responsibility that needs to be emphasized more with less focus on BLM acting as private energy development brokers. 26-22

II. THE DEIR/S DESCRIPTION OF PROJECT ALTERNATIVES IS INSUFFICIENT

The alternatives presented do not put forth the most environmentally superior project that would concurrently meet community renewable energy needs that this Project purports to address, and yet one is available: The Alternative of reliance on a distributed renewable energy source, i.e. rooftop solar on existing buildings. Such an Alternative would clearly reduce or eliminate the development and degradation of native habitats on public lands, and could reduce transmission costs by reducing the need, and extent, of additional transmission lines required for Projects like this one. Greater reliance and incentivization of rooftop solar would place the energy source much closer to the demand and reduce other costs as well, including mitigation costs that would be minimized by default of reduced impacts to natural resources, and vastly reduced need for compensatory mitigation. Additionally such actions would divert much-needed discretionary funds for BLM to maintain and preserve park and other protected lands in lieu of acting as oversight administrators of development projects and mitigation parcels. 26-23

The agencies could also provide an alternative that relies on a combination of strategies, i.e. rooftop solar plus development of already highly degraded parcels, such as abandoned agricultural fields or abandoned "developed" habitat. This would similarly avoid destruction and degradation of sensitive desert habitats that are still essential for survival of various at-risk species discussed in the DEIR/S.[6]

USFWS Recommendations for environmentally superior design alternatives to reduce impacts are ignored.

The DEIR/S notes that during the Project scoping period the USFWS requested that an alternative designed to minimize impacts to migratory birds, as well as other special status species, be considered. The Applicant denied this request, saying that some features are not "not technically or economically feasible".[7] They state that irregular spacing within arrays, placing gen-tie lines underground, and eliminating open construction ponds (which could be covered via various structurally flexible strategies) might reduce power output and would not be economically feasible. As a result, a specific Migratory Bird and Special Status Species Protection Alternative was not developed, as the DEIR/S points out. This argument is specious and akin to saying that if the Project was reduced whatsoever in scope to any degree it would make construction infeasible, ignoring the reality that proposed Alternatives include a reduction in Project scope.

26-23

USFWS's recommendations are worth further consideration, especially for a Project whose development footprint as proposed would comprise almost 6 square miles. The DEIR/S provides no substantial evidence to support the claim that an environmentally superior design of the Project as suggested by USFWS would be infeasible. Indeed, it is not the BLM's responsibility to compromise publicly owned, existing resources for profit maximization of a private developer. To do so demonstrates a bias towards the developer while ignoring potential avoidance of impacts for the life of the project and ignoring stakeholder concerns. There are various alternatives that could be environmentally superior, and aid in examining the role of different array and panel designs to reduce bird impacts and lead to advances in project design for future projects. For instance, researchers have identified ways to make glass visible to birds as an obstacle without altering the function of the reflective surface[8]. This knowledge could be applied to a section of the site's solar panels, likely without disrupting significant energy output, and be carefully monitored to compare rate of impacts for the life of the Project. Other permutations of environmentally superior array configurations could be utilized, but the DEIR/S makes no attempt to consider any such options despite proposing such a massive development that lends itself to creative modifications for research as much as energy output. Future industrial solar developments could take great advantage of the findings of such alterations.

III. THE DEIR/S RELIANCE ON DEFERRED MITIGATION RESULTS IN UNMITIGATED IMPACTS

26-24

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[6] *See* National Parks & Conservation Association v. Bureau of Land Management, Ninth Cir. Dkt Nos. 05-56814 et seq. (11/10/09).

[7] DEIR/S 2-11

[8] Smith, J. and Dwyer, J. (2016). Avian Interactions with Renewable Energy Infrastructure: An Update. *The Condor*. 118(2): 411-423. https://doi.org/10.1650/CONDOR-15-61.1
-See also: https://abcbirds.org/program/glass-collisions/

a. Various Mitigation Plans for Protected Species and Entire Taxa Deferred to Future

Section 2.3.7.5 of the DEIR/S states that the Applicant will "develop and implement a variety of management plans and procedures for protection and mitigation of impacts to wildlife."[9] These include A Bird and Bat Conservation Strategy (BBCS) that would be developed to describe measures to protect "sensitive bird species". It also states that unavoidable impacts to burrowing owls would be mitigated based upon California Burrowing Owl Consortium guidelines, and that due to potential for electrocution, collision, and nesting/perching by migratory birds on overhead power lines, the Applicant proposes to follow APLIC guidelines specified in Suggested Practices for Avian Protection on Power Lines (APLIC 2006)." The DEIR/S summarizes other mitigation measures by stating that additional plans will be developed including a Mojave Desert Tortoise Mitigation Plan, a Raven Management Plan, a Desert Kit Fox and Badger Management Plan, a Vegetation Resources Management Plan (VRMP), a Biological Resources Mitigation, Implementation and Monitoring Plan, a Worker Environmental Awareness Plan, and that prior to construction, the requirements of all of the management plans and mitigation measures associated with wildlife protection would be incorporated into a Worker Environmental Awareness Program (WEAP). The DEIR/S does provide an entire Appendix J Weed Management Plan, demonstrating that the capability to provide detail on any given Plan within this DEIR/S is not beyond the capacity of the Applicant. 26-24

Although Appendix G does claim to explain these plans "in more detail", for the most part the detail provided is not the type necessary for satisfactory baseline analysis of the efficacy of these theoretical, unscripted plans to truly mitigate significant impacts to species and habitats. For instance, these so-called "details" provided throughout sections of Appendix G state that certain practices, monitoring, adaptive management, analyses (such as to determine risks and impacts to a host of species), and minimization measures *will be* created and implemented. As a result these "details" are not informative or expository. For mitigation actions to be successful the devil is in the details, without such there can be no thorough or informative review by the public of their adequacy. As an environmental consultant and monitor for two decades I have observed many times that many mitigation measures when applied fail due to problems with lack of appropriate performance and success criteria not being implemented, defined, or otherwise analyzed prior to issuance of necessary development permits, followed by failures of mitigation success and enforcement as a result.

In summary the DEIR/S defers to the future a tremendous amount of mitigation protocols; meanwhile mitigation actions to be taken are highly indeterminate and unspecified. This is inadequate for the reviewing public to determine efficacy of the mitigation, thus denying one of the primary purposes of NEPA and CEQA review. Simply saying that a plan intends to follow guidelines or agency recommendations does not address the specific requirements for mitigation for a specific location, including the unique characteristics of a specific project and its impact on a specific sensitive, rare, or otherwise at-risk population in a specific location, including the long term, indirect, and cumulative impacts unique to every development. It does not address the characteristics of a site and its unique species cohort, and makes no mention of necessary distinctions in compensatory mitigation, revegetation, or restoration that must rely on factors including types of habitat not just onsite but nearby, as well as other variables like population densities located on and near the site, and cumulative impacts to the Project.

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[9] DEIR/S p. 2-25

It is important to note that the final EIR/S's ultimate goal is to garner permitting approval to move forward with development. It follows that approving a theoretical, unwritten set of plans provides little promise of actual, on-the-ground mitigation, and no way for the reviewing public to determine efficacy, including a lack of what specific and adequate success and performance criteria are for a site comprised of almost 6 square miles of habitat destruction and degradation on public lands, and ultimately covering a site footprint of almost 9 square miles. With yet-to-be-determined plans proposed as the primary means of mitigation extent here, the necessary details regarding everything from restoration to mitigating impacts to birds, mammals, reptiles, and a host of sensitive species, have been omitted, including the necessary and highly variable components of mitigation strategies regarding not only species-specific but site-specific protocols, methodologies, timeline, responsibilities of the Applicant, consultant, and third parties; expectations for public oversight and reporting, and enforcement. 26-24

Deferring mitigation plans to be written at a future date is also inadequate because the unscripted details are being based largely upon anticipation of a future direction by various unnamed experts – or simply administrators -to be determined. This has two inherent problems: (a) as mentioned above, it disallows reviewers to adequately analyze efficacy of mitigation measures as required, and (b) it leaves the process vulnerable to the whims, bias, and conflicts of the permittees as well as to litigation and other interruptions that can lead to mitigation failure and disruptions of the permitting processes. Resource experts on measuring effectiveness of mitigation measures, especially ones regarding compensatory tradeoffs as part and parcel to mitigation plans (as is the case with this Project), astutely state that, "Public choice theory suggests officials and traders have more incentive to facilitate barter than to ensure biodiversity protection. Thus, given the option of saying to developers "yes, with conditions" rather than "no," officials will prefer "yes, with conditions"— particularly when compliance with conditions cannot be credibly measured and officials can avoid accountability for outcomes. Legitimized bartering can thus create a policy situation "obscure enough to please all parties . . . and so ill-defined that failures will be difficult to detect."[10]

This statement speaks profoundly to why so many compensatory conservation deals have failed to meet the goals of mitigation for projects over the years, something I have personally observed repeatedly as an environmental consultant working in the public and private energy, residential, and transportation development sectors. If the lead agencies are truly concerned with their role in insuring adequate mitigation of all of the significant impacts imposed by this development – to both resident and migratory species - they will require detailed descriptions allowing for review and discussion of the adequacy of mitigation plans, by independent experts for each and every species in question, prior to issuance of a development permit, and not leave most such prescriptions indeterminate upon Project approval. 26-24

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[10] Walker, S.; Brower, A.; Stephens, R,T.; and Lee, W. (2009). Why Bartering Biodiversity Fails. *Conservation Letters* 2:149–157. Retrieved from: http://www.azoresbioportal.angra.uac.pt/files/publicacoes_Walker%20et%20al%202009.pdf

b. Mitigation Measures are Absent or Deferred, Resulting in Significant Impacts to Birds and Bats Unmitigated

26-25

The DEIR/S, in concert with the DRECP model cited in the DEIR/S, indicates the presence and high likelihood of occurrence of a high number of protected and sensitive bird and bat species, including the golden eagle, western burrowing owl, Cooper's hawk, ferruginous hawk, Swainson's hawk, Vaux's swift, Northern harrier, peregrine falcon, loggerhead shrike, Le Conte's thrasher, pallid bat, Townsend's big-eared bat, Western mastiff bat, pocketed free-tailed bat, California leaf-nosed bat, and the cave myotis.

The DEIR/S also states:

"In addition to special-status avian species for which species-specific surveys were conducted (i.e., burrowing owl and golden eagle), many other common and special-status migratory birds and raptors are expected to occur within the Study Area. **Not only does the Study Area provide nesting habitat for species of migratory birds and raptors, it is located along a major migration corridor** (i.e., the Pacific Flyway, which runs from Alaska to Patagonia and stretches inland from the Pacific Ocean to encompass parts of Montana, Wyoming, Colorado and New Mexico). The Study Area's proximity to the Colorado River increases the likelihood of migratory birds stopping over. Migratory birds and all raptors native to North America are afforded protection under the MBTA and FGC Sections 3503, 3503.5, and 3513. (Emphasis added.)"[11]

Appendix G of the DEIR/S states the Applicant will mitigate impacts to bats and nesting, residential, and migratory birds, specifically, "**WIL-6: Bird and Bat Conservation Strategy.** Prior to the Notice to Proceed, the Applicant shall finalize and implement their draft BBCS to include the following:

- Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys.
- Assess potential risk to bird and bats based on the proposed activities.
- Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species.
- Describe the incidental monitoring and reporting that will take place during construction.
- Provide details for avian and bat post-construction monitoring and reporting.
- Specify the adaptive management process that will be used to address potential adverse effects on these species.

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[11] DEIR/S 3.4-15

> - Monitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field.
>
> - The monitoring data shall be used to inform a management program that would avoid and minimize Project-related avian and bat impacts. The study design shall be approved by the BLM AO in consultation with USFWS, and shall be incorporated into the Project's Biological Resources Mitigation, Implementation, and Monitoring Plan (BRMIMP; see Mitigation Measure VEG-7) and implemented."

The DEIR/S states that these "details" will be finalized in a Bird and Bat Conservation Strategy. The *types* of data indicated above are important for a bird monitoring and mitigation plan, however the lack of detail *about* these types of data in the DEIR/S precludes comprehensive and thus accurate analysis of mitigation measures and their resultant efficacy. Descriptions including baseline conditions, potential risks, specific conservation measures relevant to different rare and unique species are all details that should be included in the DEIR/S's explanation of how impacts will be mitigated; they must be provided prior to issuance of the development approval, not after. As discussed above, this deferral to the future is inadequate for thorough impact mitigation analysis and results in impacts remaining unmitigated. 26-25

Appendix G also states, "Post-construction mortality monitoring will be required for a minimum of two years, including the following project components: PV solar panel arrays (40% survey coverage per year), perimeter fencing (100% survey coverage per year), and the gen-tie line (50% survey coverage per year)" and "The monitoring data shall be used to inform a management program that would avoid and minimize Project-related avian and bat impacts."

There is utility in adapting plans to ongoing monitoring and resultant data, but how will impacts be successfully, reliably mitigated prior to sufficient data being collected over the long term, to inform decision-makers on how to adjust the as-of-yet theoretical plan? Why will the solar panel and gen-tie survey coverage be half or less than half, what is the justification for such incomplete coverage? I have participated in mortality monitoring of industrial solar arrays in the Sonoran and Mojave deserts of similar type, and size, of the proposed Project, and our surveys covered 100% of the site. 100% coverage is feasible even for relatively large sites, and obviously not too time consuming to carry out, therefore there is no necessity of partial coverage of monitoring for any reasons of practicality or capability. The U.S. Geological Services (USGS) industrial solar site monitoring protocol guidelines reinforce this where they state,

> "Because industrial solar facilities are established in generally flat, arid areas, the search area extent can be the entire facility, with each source of mortality sampled in its entirety....To optimize overall detection probability for all species, we recommend that searches be conducted along relatively wide transects that cover the full extent of each feature rather than covering only a randomly selected set of sample plots with relatively narrow transects within the feature. The advantage to full-extent transects is that the overall detection probability is maximized, that is, not limited by a sampling fraction less than one."[12]

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[12] USGS. (2016). Mortality Monitoring Design for Utility-Scale Solar Power Facilities. Open File Report 2016-1087. Retrieved from: https://pubs.usgs.gov/of/2016/1087/ofr20161087.pdf

Such a lack of expository analysis in regards to monitoring design exemplifies why the details for mitigation plans are necessary for adequate review and analysis prior to development, not deferred until after Project approval and construction. 26-25

c. Mitigation Protocols for Nesting Birds are Inappropriately Deferred and Inadequate

26-26

The DEIR/S Mitigation Measure VEG-8 "Avoidance of Biological Resources During Construction" states that monitoring to reduce impacts to potentially breeding birds will be conducted in accordance with an as of yet nonexistent Nesting Bird Monitoring and Management Plan that shall include "management measures" to prevent disturbance to all nesting birds from construction related activities. Mitigation Measure VEG-8 states:

> "Triggers for management shall be evidence of Project-related disturbance to nesting birds such as: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. The Bird Monitoring and Management Plan shall include a description of management actions ... limiting construction activities in an appropriate sized no-disturbance buffer that are deemed by the biologist to be the source of disturbance to the nesting bird."[13]

Additionally, Mitigation Measure WIL-7 states that:

> "Pre-construction surveys for nesting birds shall be conducted within a 14-day period preceding initiation of grading or mowing activity. Workers shall be trained in the WEAP training to identify and report nests in active construction areas...If active nests or suspected active nests are detected during the survey, a buffer zone (protected area surrounding the nest, the size of which is to be determined by the qualified biologist) and monitoring plan shall be developed...the qualified biologist shall monitor the nest until he or she determines that nestlings have fledged; activities that might, in the opinion of the monitors, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made."[14]

First, these two mitigation measures partly contradict each other, resulting in confusion as to which variables will dictate which actions: triggers as defined above? If no "triggers" are observed, is the nest ignored? Who will be "monitors" detecting nests, biologist or workers? Both? And at what time intervals after commencement of construction will nesting birds be monitored throughout construction?

There are several other problems with the mitigation measures proposed to reduce impacts to nesting birds:

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[13] Appendix G-9

[14] Appendix G-34-35

First, "triggers for management" of construction related activities are inappropriate since they are based upon behavioral responses indicating negative impacts that are already occurring/ have occurred. The appropriate mitigation would include (but not be limited to) surveying for active nests and then avoiding these nests, per the MBTA requirements, by stopping construction nearby, or at a minimum by way of a designated avoidance buffer - typically of several hundred feet depending upon the species involved - until the nest has fledged. This is standard mitigation procedure, whereas taking measures to avoid further impacts only after birds are already demonstrating negative behavior to indicate disturbance may be too late to have avoided a significant reduction in reproductive success of the nesting birds. For instance, nesting birds are highly sensitive to abandonment when laying eggs. A construction disturbance (noise, dust, human presence) could agitate birds to the point of abandonment of a nest with eggs prior to the biologist actually observing some overt indicative "trigger" behavior. Abandonment or other alterations in behavior could results in a significant reproductive energy expenditure on the birds and could result in a completely failed reproductive output for the entire year. This could reduce breeding success, bird fecundity, increase vulnerability to predation or competitions, all variables that are readily predictable results of disturbance. Nesting birds do not announce when they are suffering reduced breeding success or fecundity from anthropogenic impacts; determining such an impact - short of complete abandonment by the breeding pair - is far from simple or straightforward, and typically requires extensive data collection about nestling and fledgling mortality and/or success, changes in regimes of predation, prey selection, competition, other behavioral changes, etc. throughout one or more breeding seasons. Birds that are impacted by noise, dust, pollutants, human presence, attraction of diurnal or nocturnal predators to human structures (ravens, coyotes, feral dogs) do not as a rule demonstrate overt or readily available cues to notify human observers that such negative impacts are at play at any given moment. In short, one cannot rely on birds overtly expressing behavioral indications leading to reduced reproductive success in a manner readily detected by a biologist observing them. 26-26

This error is another example of where the determinants of success of mitigation, including criteria for management, is in the details, and the few details provided here demonstrate erroneous methods regarding necessary protocol to avoid and mitigate potential significant impacts. Based upon this faulty biological assumption, one can only wonder what other errors will be scripted in the many plans yet to be written and deferred to the future, and unavailable for public review.

Second: In respect to the WEAP training or related expectations of workers reporting, for reasons also described above mitigation of impacts should never rely on non-biologists to detect or report nests or any other aspect of onsite birds, regardless of any training or not. One may as well ask the electrical technicians to have an afternoon training to assist the project lawyer or accountant.

Third, buffer zones of avoidance should be determined with confirmation of a USFWS or CDFW biologist and not left the subjective determination of a biologist hired by the developer as would be the case described in WIL-7. Determining appropriate buffers is not an exact science, and its discretionary nature is therefore consistently subjected to abuse.[15,16] As an environmental consultant who has worked as a biologist on over 200 energy and development projects including eight industrial solar facilities, only twice have I observed a development project put construction on hold for the duration of a nesting event to avoid impacts to a nesting bird, and even then it was for a federally endangered species, and never at a solar facility. It is simply rarely done; if and when a nesting bird is detected the project applicant's biologist almost always chooses a buffer (subsequently often reduced by a variance) or a buffer exemption - based upon what is most convenient for the developer, not based upon science in combination with the precautionary principle as should be the case.[17] Time and again requests for a permit "variance", reduced buffer, or exemption for the requirement off a buffer is granted, due to the developer invariably claiming economic hardship to do otherwise, and these variances or adjustments to buffers are thus often reduced to the point of inefficacy and potential harm.[18] In summary, to ask the biologist to determine the appropriate buffer, and duration of said buffer, creates a conflict of interest based upon the contractual responsibilities given the biologist, and including the NDA they are all required to sign (see discussion above). The buffers should always be determined by USFWS or CDFW, at a minimum for every species protected by the ESA, CESA, MBTA, and Eagle Act.

26-26

Fourth, it is important to iterate for the sake of mitigation adequacy that avian impacts have repeatedly been underestimated and minimized in environmental impact analyses for solar projects, resulting in a lack of impact mitigation due to too many project Applicants and lead agencies ignoring the Precautionary Principle, and current available evidence. As a lead biologist conducting bird and bat mortality surveys on several industrial solar facilities (facilities with between 100 and 2700 acre footprints), I have witnessed a significant impact that occurs during and post-construction, observed at Mojave and Sonoran desert solar facilities bordered by both agricultural and native scrub habitats. I and my colleagues repeatedly observed that ground nesting birds that are attracted to areas dominated by bare or rocky ground, sand, or soils are attracted to the shaded microhabitats underneath and bordering

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[15] Ruddock, M. and Whitfield, D.P. (2007). A Review of Disturbance Distances in Selected Bird Species. A Report from Natural Research (Projects) Ltd to Scottish Natural Heritage. 181 pp. Retrieved from: https://www.nature.scot/sites/default/files/2018-05/A%20Review%20of%20Disturbance%20Distances%20in%20Selected%20Bird%20Species%20-%20Natural%20Research%20Ltd%20-%202007.pdf

[16] See also: SDGE-Sunrise Powerlink "Buffer Incident Report" https://www.eastcountymagazine.org/sites/eastcountymagazine.org/files/SDGE%20eagle%20Buffer%20Zone%20Incident_0.pdf

[17] Raftery, M. (Dec. 2011). SDG&E Gets Variance To Work During Start Of Eagle Nesting Season. *East County Magazine*. Retrieved from: https://www.eastcountymagazine.org/sdge-gets-variance-work-during-start-eagle-nesting-season.

[18] Raftery, M. (Nov. 2011). SDG&E Shifts Helicopter Flights as Eagle Nesting Season Begins; Utility Seeks Variance from State and Federal Regulators. *East County Magazine*. Retrieved from: https://www.eastcountymagazine.org/sdge-shifts-helicopter-flights-eagle-nesting-season-begins-utility-seeks-variance-state-and-federal
See also Raftery, M. (March 2011).Lakeside Residents Claim Helicopters Violate No-Fly Zone Near Eagles' Nest. *East County Magazine*. https://www.eastcountymagazine.org/lakeside-residents-claim-helicopters-violate-no-fly-zone-near-eagles%E2%80%99-nest

the solar panel arrays[19]. These species have not evolved to anticipate the hazards of these areas as nesting sites, which include collision with utility vehicles and enhanced susceptibility to hyperthermia due to the heat generated by the panels and related infrastructure. The birds choose these nest sites in the cooler weeks of spring, but as summer heats up they not only have to deal with the natural heat stress that increases as the season temperatures rise, but they also must deal with the unanticipated additional heat compounded by the presence of the solar panels. The high heats appear to exceed their limits of tolerance, indicated by an unusually high rate abandonment of nests and scrapes containing eggs (see photos 22-23). There is little doubt this behavior (abandonment) negatively impacts the species' breeding success and contributes to potential negative impacts. 26-26

In the southwest desert bioregion birds observed to be prone to this include species such as nighthawks, killdeer, black-necked stilt, and doves, among others; all are species protected during nesting season under the Migratory Bird Treaty Act (MBTA). Thus far this phenomenon has not been described in the peer reviewed literature (in prep, Owens and Hord), not surprisingly because so few studies have been conducted that include long term observations of industrial solar facilities' impacts to wildlife aside from mortality monitoring. Indeed much of this mortality monitoring is not readily available for public review. This is one major reason why mitigation must include professional, statistically significant mitigation monitoring *throughout the life of the Project*, conducted by biologists, not site personnel.

Photos 1-24 illustrate some examples of birds and other wildlife (a) striking and (b) using solar facility equipment and roads to nest, roost, stopover, and perch resulting in higher than normal likelihood of hazards affecting breeding, including strikes, overheating, increased vulnerability to predation, and electrocution.

IV. MUCH OF THE DEIR/S MITIGATION ANALYSIS IS INCOMPLETE RESULTING IN SIGNIFICANT IMPACTS UNMITIGATED

a. The Information Provided for Compensatory Mitigation is Inadequate for Complete Analysis

26-27

The need for detail also plays a key practical role in determining success of mitigation based on the scope and related costs assigned to, and adopted for, third parties (i.e. environmental consultants, other contractors, land trustees, scientists, etc.) involved in the process. Many of the details regarding scope of work for a development project are determined by the prescriptions within a final EIR/S and yet are not actually agreed upon until after a development permit has been approved and contracts are being solicited. And, this often happens prior to any mitigation Plan being scripted when deferred to the future as is in this DEIR/S. See also Appendix G-76 in the DEIR/S where it states, for Desert Tortoise compensatory mitigation, "Compensation to be verified through BLM approval of compensation type and amount....Compensation to be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer." In other words, permitting would be approved, and development commenced well before the details of a Plan are even scripted and approved. Page. 10 of the Consultant Procurement Manual for California states "The scope of work is an integral part of contract development and procurement process. The scope of work may be developed from standardized tasks such as work breakdown structure, in accordance with project conditions and requirements. A multi-disciplined team should provide appropriate details for the tasks and activities in their field of expertise to complete the scope of work. Costly modifications, in terms of time and expenditures, can often be avoided with a well written scope of work, an accurate estimate and effective contract management."[20] This makes sense, and yet without a written Plan detailing or even outlining what the nature of the scope of work will be, the budget for any given part of a mitigation project is vulnerable to being reduced to the lowest bid or "efficient" estimate that by default may lack the necessary capacity to fulfill what would be the baseline success and performance standards, including consideration of things like monitoring timelines and time investment by personnel, including supervisors, biologists, and other monitors. This problem is underscored in the DEIR/S's claim about Protection and Habitat Improvement (Appendix G p. 17) where it states, 26-27

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[19] Owens, R. (December 2016). The Unpleasant Secrets of Clean Solar Energy. *The Desert Report*. http://www.desertreport.org/wp-content/uploads/2016/12/DR-Winter2016.pdf

> "The Applicant shall fund activities that the BLM AO requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands...with an estimate of $330 per acre for using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy" and "If the Applicant elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the BLM AO for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall be $2,280 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy for every acre of habitat supporting the plant species which is directly or indirectly impacted by the Project."

First, using desert tortoise habitat mitigation cost per acre as a proxy is only part of a much bigger picture, based upon all the yet-to-be scripted mitigation Plans for various sensitive species and habitats identified as being significantly impacted by the Project. Costs per acre could be slightly to significantly higher depending on overall requirements for all of the habitats and species in question, and cost per acre does not consider total cost for impacting and destroying habitat in an area yet to be determined absolutely, but certainly extensive, given the impact footprint of the Project will purportedly be a minimum of 5.9 square miles.

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[20] California Department of Transportation. (April 2017). Consultant Procurement Manual. Office of Policy Development and Quality Assurance. Retrieved from: www.dot.ca.gov/hq/LocalPrograms/AE/2017/Consultant-Procurement-Manual.pdf

Second, it should not be entirely up to the Applicant- or the Applicant and one or a few other personnel - to determine which kind of compensatory mitigation is appropriate, and where. The details to determine which mitigation lands and management of said lands will satisfy reduction to below significant of the many biological impacts discussed in this chapter should be presented for review by the public, not just the BLM AO or a few other personnel.

The following is an example of the problem posed by this omission: the DEIR/S' explanation of its "selection criteria" for land acquisition for compensatory mitigation is misleading and vague. It states that the compensation land selected for mitigation for protected plants (and thus, habitat) *may* follow any of three categories, and then proceeds to describe in nonspecific terms these categories of land that may be (a) occupied by "the species" and is "of equal or better habitat quality than that of the affected occurrence," (b) is degraded by impacts such as ORVs, ranching, or invasive plants and thus will be enhanced or restored by an as of yet unscripted Plan; or is (c) habitat that does not even host the target species to be mitigated, but may be bordered by "occupied" habitat and may accompanied by restoration "efforts".[21] In short, these are not quantitative criteria but descriptors of indeterminate compensatory lands, with no actual criteria given for why options b or c would be chosen since they would certainly require greater cost, time, and effort to achieve status as being truly compensatory to degraded and developed habitat and the protected species the habitat supports, not to mention they may be wholly or partly non-representative of migratory species that may be impacted but are not represented by onsite habitat. For instance, compensatory mitigation for impacts to migratory species that breed in non-desert habitat may involve an alternative type of compensation such as contributing conservation funds to MBTA species protections unrelated to desert land acquisition or restoration. 26-27

Desert habitat restoration specialists and other scientists who have been involved in compensatory mitigation actions for decades are describing in greater detail how mitigation success is largely dependent upon the specific processes involved in implementation. For instance, in discussing how compensatory mitigation strategies can be more successful at reaching performance standards, regional conservationists point out that these performance standards must be provided for public review, and with detail; "Key steps of such an approach include adopting an appropriate study design, organizing compensatory mitigation project files in a geospatial database, and conducting a baseline evaluation and subsequent evaluations using the study design at regular intervals."[22] Other scientists involved in energy development mitigation have provided evidence of how successful mitigation includes building mitigation measures into a project's design and thereby "facilitates a faster project review process because it can lead to fewer conflicts with regulators and the public, opens up greater opportunities for synchronized permitting and environmental review…"[23] Indeed, the courts have established that mitigation must be discussed "in sufficient detail to ensure that environmental consequences have been fairly evaluated."[24] Further, analysts of mitigation success point out the practicalities of cost as relates to performance and protocol detail, stating that "An unclear mitigation policy landscape also inhibits private investment in compensatory mitigation solutions. Having in place a clear and consistent mitigation rule set gives private mitigation providers the confidence they need to make investments in these markets. Without these conditions, fewer third-party options will be available, leaving project proponents with only the more time-consuming, do-it-yourself option."[25]

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[21] Appendix G-15-16

[22] Hough, P. and Harrington, R. (Jan 2019). Ten Years of the Compensatory Mitigation Rule: Reflections on Progress and Opportunities. *Environmental Law Reporter*, 49 pp. 10018 -10027.

[23] Wilkinson, J., Scarlett, L. Tabas, P., and Keith, B. (Jan 2019). *Environmental Law Reporter*, 49 pp. 10028-10037.

[24] Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 19 ELR 20743 (1989) (companion case to Marsh v. Oregon Natural Res. Council, 490 U.S. 360, 19 ELR 20749 (1989)).

One cannot analyze the efficacy or thoroughness of any such key steps if they are unscripted and theoretical, as is the case with this DEIR/S, and left solely to one or a few personnel to write, review, and approve. Deferring the scripting of details to a future date is unacceptable, as it denies the reviewing public, including experts, the ability to offer analysis and recommendations to design, performance, and success criteria, and to review the pathways to enforcement presented. In short, these Plans should be provided in detail in the EIR/S and include performance standards, success criteria, and timelines and the very least. They should also predetermine potential compensatory mitigation parcels whose biodiversity, habitat, and species composition have already been catalogued in the recent past to determine efficacy of mitigation compensation.

26-27

The DEIR/S Appendix G states that the "The Bird Monitoring and Management Plan shall include a description of management actions, which shall include, but not be limited to, limiting construction activities in an appropriate sized no-disturbance buffer that are deemed by the biologist to be the source of disturbance to the nesting bird."[26] In my years as an environmental consultant I have witnessed that it is increasingly common for agencies to give a "variance" or exception of a permit and defer to the complaints of the developer when construction is at risk of being reduced in capacity or delayed due to risk of a biological impact, especially in the case if nesting birds (for further discussion of this, see below). These variances for the prescribed mitigation can and do lead to mitigation measures that are altered and diminished in effectiveness from their written prescriptions, resulting in unmitigated, significant impacts, and unanticipated (and sometimes unreported) take of species.

Alternatively, this practice also occurs when mitigation protocols are vague, inadequate, or lacking in specificity, as is often the case, allowing for more discretion by agencies and the developer to push for a variance i.e. exception to the mitigation procedure. On both large scale industrial solar and wind sites in Southern California I have witnessed certain actions by the developer, including violations such as ignoring or modifying regulations and mitigation measures, that go unreported in part due to environmental consultants' ubiquitous use of extreme and rigid non-disclosure agreements (NDA), where biologists and other experts are required to sign strict NDAs to be employed/ contracted and subsequently are at risk of losing their jobs, or worse, if they report any unpermitted harassment or take of protected species, or even the potential for take based upon actions by the developer. This is a well-known but publicly unacknowledged phenomenon of the use of NDAs to reduce obligations, including aspects of costs and scope of work, in applied mitigation strategies for cost-saving for high profile sites, especially those in the energy, military, and extractive sectors of development.[27] One way to reduce such systemic pitfalls in mitigation implementation is to provide very detailed plans prior to project permitting, i.e. within the impact assessment.

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[25] Wilkinson, J., Scarlett, L. Tabas, P., and Keith, B. (Jan 2019). *Environmental Law Reporter*, 49 pp. 10028-10037.

[26] DEIR/S Appendix G-9

[27] Rosenblum, P. and Maples, S. (2009). Contracts Confidential: Ending Secret Deals in the Extractive Industries. Revenue Watch Institute. Retrieved from: https://resourcegovernance.org/sites/default/files/documents/rwi-contracts-confidential.pdf

Further evidence of the nature of this type of problem regarding lack of appropriate oversight or enforcement post-permitting of developments is iterated by Kathryn Simon, President and wildlife biologist of Ironwood Consulting, in her report to the Desert Tortoise Council Symposium in 2017 where she summarized large scale energy developments thus: "Renewable energy at an industrial scale is an important part of achieving energy independence for the United States. However, the political backing that supports energy development in the western part of the country has also resulted in the neglect or abuse of natural resources. While a great deal of effort is placed on properly siting and permitting a project, little or no oversight happens once the project enters construction and continues into operations and maintenance. This has led to a "power vacuum," often filled by the project proponent's "environmental" staff who often ensure the least amount of information leaves the project and is reported to wildlife agencies and the public. Specific examples of such behavior are provided and suggestions made for biologists on the ground in achieving their goals of proper monitoring oversight."[28]

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I have witnessed the problem she summarizes here, regarding reports that I and my colleagues provided to a lead environmental consultant on projects for the purpose of review by the lead agency (i.e. USFWS), as part of mitigation protocol. It is now common practice that the environmental consultant supervisor gives these reports to the developer first, where they are allowed to be edited - without the biologist's permission - prior to being given to the lead agency. Additionally, I have witnessed several approved senior biologists working on alternative energy sites in Southern California, during and post-construction, be immediately terminated by large, international environmental consultancies for pointing out that mitigation protocols are not being followed or enforced. This is a real and significant problem on industrial solar and wind development projects as the push for alternative energy is considered to be at an almost emergency status, and unreasonable time deadlines and cost minimization efforts override effective mitigation protocols, best available science, and biodiversity-enhancing adaptive management. One cannot presume such problematic actions described above will be avoided simply by the existence of certain regulations or an approved permit(s), especially since they fall between the gaps of environmental agency oversight requirements and discretionary actions, partly due to issues of lack of transparency throughout contractual processes and applied on-the-ground actions.

In short, these mitigation measures that have been partly or almost entirely deferred to the future are inadequate. To ensure adequate mitigation of indirect, direct, and cumulative impacts, the Applicant should commit to providing at a minimum an outline of the proposed Plans, including the relevant performance and success criteria associated with each species and habitat in question.

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[28] Simon, K. (February 2017). How to Navigate Difficult Situations on Projects. *42nd Annual Meeting and Symposium of the Desert Tortoise Council*, Las Vegas, NV. Retrieved from: http://www.deserttortoise.org/ocr_DTCdocs/2017DTCSymposiumAbstracts-OCR.pdf

b. The DIER/S Fails to Adequately Analyze and Mitigate Impacts to Bats

Mitigation strategies including avoidance and minimization of disturbances, and acquisition of specific off-site compensatory parcels should be described in detail (as opposed to being posed in theoretical categories as the DEIR/S does (see above)), for impact mitigation at the individual and relevant population level. This should be done not only for resident and migratory birds, it should describe the provision of adequate foraging and roosting habitat for bats, especially those identified as using the site, specifically: the pallid bat, Townsend's big-eared bat, Western mastiff bat, pocketed free-tailed bat, California leaf-nosed bat, and the cave myotis. The DEIR/S states that "Based on the relatively undeveloped nature of the surrounding landscape, there are very few sources of light associated with the Project area. The primary source of light and glare in the area is motor vehicles traveling on surrounding roadways and from residences in Nicholls Warm Springs/Mesa Verde."[29] It goes on to declare that throughout the life of the project "Site security would be provided 24 hours per day, 7 days per week, through a combination of the fencing, lighting...Night lighting would be provided at the O&M building, the On-Site Substation, the temporary construction staging areas, and on or near each PCS station"[30] and would include additional street lighting.[31] Table ES-1 and section 2.3.4.7. and 2.3.6 note that there will be additional nighttime lighting during construction and decommissioning, according to a Lighting Management Plan, as well as identifying lighting as being a source of impacts to wildlife via collisions,[32] and that the Project will increase night lighting that could disturb special-status species, including alteration of foraging and breeding behavior. This is particularly true for bats. However, the DEIR/S erroneously equates observations of mortality as the only measure of impacts by citing a "low" number of dead bats observed at the Desert Sunlight and Genesis projects. However, the reality is that Project impacts from night lighting, habitat loss and fragmentation, fugitive dust, predator attraction, etc., throughout almost 6 square miles of the proposed project development footprint could cause changes in foraging and breeding that may result in increased competition, predation, and overall reduced fecundity and viability that could impact bats at the subpopulation level, and at yet not be observable as mortalities onsite. 26-28

It is a widely accepted scientific consensus that nationwide bats of multiple species are suffering dramatic losses due to habitat loss, light and noise pollution, habitat disruption, and the spread of white-nose syndrome; evidence demonstrates that over one third of bats studied in North America are vulnerable, imperiled, or critically imperiled.[33] Abundant research has also demonstrated that artificial light and noise does increase the risk of mortality and reduce foraging success by bats in both urban and rural settings.[34] Because impacts to bats are notoriously undervalued and underestimated in impact assessments on both public and private lands – as is the case with this Project and DEIR/S - it is necessary to emphasize their importance to ecosystem integrity, as Stone et. al. do here:

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[29] DEIR/S p. 3.19-2

[30] *Ibid.* 4.4-12

[31] *Ibid.* p.2-10

[32] *Ibid.* table 4.1-1

[33] Gaworecki, M. (Aug 14, 2017). Nearly One-Third of Bat Species In North America Are On the Decline. *Mongabay.* https://news.mongabay.com/2017/08/nearly-one-third-of-bat-species-in-north-america-are-on-the-decline/

[34] Cravens, Z. M., Brown, V. A., Divoll, T. J., & Boyles, J. G. (2018). Illuminating prey selection in an insectivorous bat community exposed to artificial light at night. *The Journal of Applied Ecology*, 55(2), 705-713. doi:http://dx.doi.org.jerome.stjohns.edu:81/10.1111/1365-2664.1303

> "As the second most species-rich mammalian order in the world (Wilson and Reeder 2005) bats represent a significant contribution to global biodiversity (Altringham, 1996; Racey and Entwistle,2003). Bats make effective bio-indicators, capturing the responses of a range of taxa and reflecting components of biological diversity such as species richness and biodiversity (Jones et al., 2009). Due to their high niche diversity bats are also effective ecological indicators reflecting responses over a range of trophic levels and highlighting effects of environmental degradation on specific ecological processes that are key to ecosystem functioning. Bats are potentially effective bio-indicators for conservation biologists measuring the human impact on the environment, including the impacts of light pollution as their relative abundance, species richness, and vulnerability to disturbance can be relatively easy to monitor over successive years (Fenton et al., 1992).Bats are therefore critical to ecosystem functioning and should be included in conservation plans aimed at preserving the integrity of ecosystems (Kalka et al., 2008). Declining bat populations may compromise important ecosystem services, so understanding their conservation needs is vital (Williams-Guillén et al., 2008). Urbanization and development affect bat habitats, either through direct loss or disturbance from light and noise pollution or human activities. Connectivity of habitat and foraging areas to roosts is fundamental to the survival of many bat populations (Verboom and Huitema, 1997). **Changes in habitat affect the quantity, quality and connectivity of foraging, drinking and roosting resources available to bats. Light pollution is now recognized as a key biodiversity threat and is an emerging issue in biodiversity conservation, with important implications for policy development and strategic planning** (Emphasis added.)" 26-28

In respect to lighting, Stone and colleagues confirm that, "Artificial lighting can have an impact upon a range of bat behaviors including foraging and commuting, emergence, roosting, breeding and hibernation. Artificial lighting can damage bat foraging habitat directly making an area unsuitable for foraging, or indirectly by severing commuting routes from roosts...Illumination of foraging areas can potentially prevent or reduce foraging activity, causing bats to pass quickly through the lit area or avoid it completely (Polak et al., 2011). Lighting can disrupt the composition and abundance of insect prey (Davies et al., 2012). Artificial illumination in foraging habitats can effectively cause a loss of foraging areas for some bat species."[35]

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[35] Stone, Emma & Harris, Stephen & Jones, Gareth. (2015). Impacts of artificial lighting on bats: A review of challenges and solutions. *Mammalian Biology - Zeitschrift für Säugetierkunde.* 80. 0.1016/j.mambio.2015.02.004. https://www.researchgate.net/publication/272889669_Impacts_of_artificial_lighting_on_bats_A_review_of_challenges_and_solutions

See also Hölker, F., Wolter, C., Perkin, E.K., Tockner, K. (2010). Light pollution as a biodiversity threat. *Trends Ecol. Evol.* 25, 681–682.

See also Gaston, K.J., Bennie, J., Davies, T.W., Hopkins, J. (2013). The ecological impacts of nighttime light pollution: a mechanistic appraisal. *Biol. Rev.* 88,912–927.

See also Longcore, T., Rich, C. (2004). Ecological light pollution. *Front. Ecol. Environ.* 2,191–198.

See also Polak, T., Korine, C., Yair, S., Holderied, M.W. (2011). Differential effects of artificial lighting on flight and foraging behaviour of two sympatric bat species in a desert.J. Zool. 285, 21–27.

See also Shields, W.M., Bildstein, K.L., (1979). Bird versus bats: behavioral interactions at a localized food source. *Ecology* 60, 468–474.

Recent research describes how light intensity, type (i.e. short wavelength "blue" lights vs. standard, non-LED lighting), distribution, and other factors do influence direct and indirect impacts on bats.[36] These considerations should be part of a Lighting Management Plan provided in the DEIR/S that must address the significant impacts to bats created by this extremely large proposed development, and should consider reduced lighting and alternative lighting strategies to minimize impacts beyond that proposed in the DEIR/S. Additionally, The DRECP offers detailed guidelines on how compensatory mitigation can be evaluated and described for impacts to bird and bats[37] including where it states,

> "To determine the required compensation the following section describes a generalized compensatory framework for operational impacts on bird and bat Covered Species. The compensatory framework for operational impacts to bird and bat Covered Species is based on Resource Equivalency Analysis (REA), which measures the total replacement cost for a given resource. REA relies on an understanding of a) the relative loss to a population (debt) resulting from an operational activity i.e., the life-time and generational loss of productivity of an individual and b) the productivity gain (credit) to a population from the implementation of compensation actions. It is important to recognize that both sides of the balance sheet estimate the debt and credit in the same currency, to clearly and transparently estimate the degree of compensation necessary. In this case, the currency is the number of bird/bat-years gained or lost because of operational impacts and the resulting compensation. The accuracy with which the debt/credit of bird/bat-years can be estimated is dependent upon the extent to which the life history, demographics, reproductive rate, and susceptibility to operational impacts are known."[38]

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Clearly the DEIR/S does not provide the necessary information, analysis, or relevant discussion to begin to assess compensatory mitigation as described above. Without these kind of data provided, including in relation to analysis of the adequacy of proposed land acquisition parcels, how exactly can the mitigation Plan be scripted prior to commencement of development, as the DEIR/S indicated it will be?

The necessity of detailed data provided for public review is underscored by the fact that significance criteria for substantial impact analyses may have three principal factors: magnitude or intensity and duration of the impact; rarity and context of the affected resource; and susceptibility of the affected resource to disturbance. For instance, the relevant criteria to determine the degree of impact of noise, under CEQA includes three variables of magnitude, frequency, and duration of the impact, as opposed to basing analyses and resultant mitigation prescriptions on basic data such as the potential for a species to occur. The evaluation of significance must also consider the interrelationship of these factors.[39] Given how much birds and bats use noise as part of their survival, for everything from foraging and breeding to territory and conspecific recognition, these variables are certainly relevant especially over the long term. Additionally, a relatively small-magnitude impact on a state or federally listed species could be considered significant if the species is rare and highly susceptible to disturbance. This is true not only for determining significance of impact, but degree of significance in respect to what mitigation measures would be adequate. Given all of these factors, the DEIR/S has failed to describe how and to what extent bats may likely be impacted by the Project, and as such impacts to bats remain significant and unmitigated. 26-28

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[36] Gaston, K.J., Davies, T.W., Bennie, J., Hopkins, J. (2012). Reducing the ecological consequences of night-time light pollution: options and developments. *J. Appl. Ecol.* 49, 1256–1266.

[37] DRECP EIR/EIS Appendix H.3.3 https://www.fws.gov/carlsbad/PalmSprings/DRECP/Appendix%20H_Conservation%20and%20Management%20Actions%20Documentation/Appendix%20H_CMAs%20Documentation.pdf

[38] *Ibid*. p. H-66.

[39] City of San Diego Development Services Department. (Jan 2011). California Environmental Quality Act

c. Impacts to Birds from Collisions to Facilities are Underestimated and Ignored Resulting in Unmitigated Impacts to Sensitive and Protected Bird Species

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The DEIR/S states mitigation will "Monitor the death and injury of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), **and the solar field** (Emphasis added)."[40]

As important as monitoring is to contribute to future databases and management strategies, it does not mitigate actual harm, injury, or death to individuals in any way, so should not be categorized as actual mitigation. The DEIR/S includes monitoring of the solar arrays as part of its mitigation measures, and yet the DEIR/S is misleading in its denial of the fact that bird strikes to solar panels will cause a significant impact, or that estimating impacts would be mere speculation or not supported by "available" data. To downplay the significance of the impacts to birds, the DEIR/S resorts to an outdated argument where it claims "Available information is not sufficient to allow quantification of the potential hazard of glare [lake effect]. Forecasting the importance of PLP [polarized light pollution) to the survival of avian populations and the integrity and function of ecosystems remains largely speculative."[41]

This attempt at obfuscating impacts with vague and erroneous language (i.e. "forecasting" and "speculative") creates an unsupported unscientific assumption that is counter to substantial evidence of the impacts of bird strikes to PV arrays. The Project will result in removal of habitat and installation of reflective solar panels covering a minimum of almost 6 square miles, and will undeniably pose a significant impact to birds both residential and migratory over the life of the Project, i.e. 30 or more years.

Contrary to the DIER/S's claim, there is abundant evidence, including supporting statements by U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), as well as evidence provided by other research biologists, showing that such impacts are not speculative, and indeed there is a combination of cumulative, replicated, peer reviewed, and photographically verified evidence that

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Significance Determination Thresholds. Retrieved from: https://www.sandiego.gov/sites/default/files/legacy/development-services/pdf/news/sdtceqa.pdf
See also Lawrence, D. and David, P. (2007). Impact significance determination—Designing an approach. Environmental Impact Assessment Review - *Environ Impact Assess Rev.* 27(8): 730-754. 10.1016/j.eiar.2007.02.012.

[40] DEIR/S Appendix G-34

[41] DEIR/S p. 4.4-12

birds of many taxonomic Families local residents and migrants, consistently collide with (a) reflective solar panel arrays of varying designs, (b) associated transmission lines, and (c) other structures associated with varying types and designs of industrial solar facilities constructed in the southwest, clearly demonstrating that solar facilities, regardless of design, size or location, pose significant impacts to birds.

Due to the Applicant's denial of the ability to quantify or characterize bird strikes to PV arrays on this Project, below I have presented detailed evidence to the contrary. This evidence should be included in the analysis and presentation of impacts to all resident and migratory birds, including state protected burrowing owls and Swainson's hawks, and federally protected golden eagles. The detailed analysis should be part of a compensatory mitigation strategy provided in the final EIR/S and not deferred to an unscripted Bird and Bat Monitoring Plan, or other such plan. For sensitive migratory species that may be impacted, compensatory mitigation should be considered that can enhance conservation of species not represented by the habitat onsite.

A. The DEIR/S relies heavily, in part, on Worker Environmental Awareness Program (WEAP) training for mitigation of impacts to vegetation and wildlife, stating the worker program will include,

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> "requirements for reporting injured or dead animals...shall be implemented during site preconstruction, construction, operation, and decommissioning...shall include training components specific to protection of special-status plants that may occur in the Project Area...Workers shall be trained in the WEAP training to identify and report nests in active construction areas," and "the training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern...."[42]

The assumption that onsite workers, via a WEAP or other sort of training, might adequately observe, detect, identify, and otherwise report nesting, injured, or dead birds or other animals in a manner similar to that done by biologists with years of training for their profession is not only illogical, it is unsupported by the on-the-ground reality even if it were not a flawed measure to begin with. Having personally conducted numerous bird and bat mortality monitoring surveys on large industrial solar sites with various configuration of solar arrays, I can confirm that once a solar industrial facility construction is complete, the available staff onsite typically comprise a total of one to a few individuals at any given time working indoors at their assigned management, engineering, safety, and/or administerial jobs which do not include walking among the panels and other project structures in search of, and correctly identifying, nesting, injured or dead animals. This is not part of their job definition or expertise regardless of whether or not they attend and receive a sticker on their helmet some kind of training workshop. This point is underscored by where the DEIR/S states that "Operations and maintenance of the solar facility and gen-tie line require minimal activities on the part of the operator. The facility operates passively, with no fuels, no thermal cycle, and no need for water use for electricity generation except for washing of solar panels… Dust would be washed from solar panels up to twice per year."[43]

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[42] Appendix G

B. The DEIR/S's oversight of Project impacts – direct, indirect, and cumulative - by way of bird strikes throughout the life of the project is fatally flawed in its omission due to the plethora of evidence that such strikes knowingly contribute to bird deaths and injuries on every industrial scale solar facility. The following is a compilation of evidence supporting the facts that the project will result in potentially significant direct, indirect, and cumulative impacts to migratory and resident birds, breeding and non-breeding, and the project does not adequately mitigate such impacts:

(1) Table 1 summarizes a partial review of avian mortality reports for solar desert facilities submitted to the state and federal Fish and Wildlife agencies between 2011 and 2016, depending on the report. Table 1 shows just a partial summary that lists species that are protected under the Federal ESA, California ESA, California Species of Special Concern, and Migratory Bird Treaty Act, and have been killed by collision deaths at Southern California desert solar facilities, including burrowing owls, loggerhead shrikes, and Le Conte's thrasher, species all identified as residents on the Project site. The data therein demonstrate not only the importance of appropriately scripted scientific, methodical data collection to determine direct and cumulative impacts via strike mortality (a plan completely lacking in the DEIR/S), it provides undeniable evidence that solar facilities specifically attract and kill birds across many groups including migrants; resident birds are not the only ones affected. It is also important to note that these structures are not discriminatory in attracting only common desert residents. Table 1 shows that protected, endemic, and unusual desert migrants of all sizes succumb; including marine and freshwater species including the blue-footed booby, surf scoter, Virginia rail, common gallinule, common loon, pelicans, a jaeger, various ducks, grebes, a surf scoter, and other birds native to marine and freshwater habitats. 26-29

The California Valley Solar Ranch Project (CVSRP) is located in the California desert region primarily on land designated largely as formerly disturbed habitat. The CVSRP development footprint that contains the PV solar arrays and operating facilities is approximately 1475 acres,[44] less than half of that of this Project, and generates a purported 250 MW as compared to this Project's predicted 450 MW. Despite what was deemed lower quality habitat and thus less used by various bird species, **over the course of just two years 703 bird mortalities were reported at CVSRP, including three burrowing owls; this despite burrowing owl mitigation measures in place**. This predicts a mortality of 10,545 birds for the life of a 30-year facility, including 45 burrowing owls. One need only extrapolate the impact of a project more than twice CVSRP's size in acreage, such as this Project predicted development footprint of 3,770 acres, to estimate that bird mortality due to strikes to solar arrays and associated infrastructure, throughout the life of this Project, could total in the tens of thousands, and would thus pose a high risk of significantly impacting an entire population or a resident or migratory species that uses this site for nesting, foraging, or a migratory flyway.

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[43] DEIR/S 2-19

[44] H.T. Harvey and Associates. (2010). Biological Assessment for the California Valley Solar Ranch Project https://www.energy.gov/sites/prod/files/2014/04/f14/CVSR_BA_11_08_10_Final.pdf

(2) In a peer reviewed study published three decades ago, McCrary et. al. reported, "We studied avian mortality at an operating solar central receiver power plant in the Mojave Desert of southern California. During 40 weeks of study we documented the deaths of 70 birds (26 species). The estimated mortality rate was 1.9-2.2 birds per week. 81% of birds of 20 species died from collisions with Solar One structures, mainly the mirrored surfaces of heliostats."[45] The study goes on to further distinguish collision deaths with reflective panels as separate from other collision deaths, "Avian Collisions are an inevitable by-product off almost all man-made structures (see Avery et al., FWS/OBS-80/54, 1980). Reflective surfaces are especially prone to collisions (Klem, Ph.D. thesis, Southern Illinois Univ., Carbondale,1979), and it is not surprising that collisions with mirrored heliostats occur on a somewhat regular basis considering the reflective surface area of Solar One".[46] 26-29

(3) Research on solar array and power line collisions demonstrates that impacts can be influenced by many variables, including proximity to developed areas and wetlands, degree of fencing, proximity to roads or roosts, wind conditions, and migration micro-pathways.[47] USGS biologists point out that numerous animal species use polarized light for orientation and navigation purposes (Horváth and Varjú 2004). As such, the potential exists for polarized light pollution (PLP) to disrupt the orientation and migration abilities of desert wildlife, including those of sensitive species. In the review by Horváth and colleagues (2009), they highlighted the fact that anthropogenic structures that produce PLP "can appear to be water bodies to wildlife and can become ecological traps for avian species. Therefore, utility-scale solar energy facilities at which photovoltaic technology is used in the desert Southwest **could have profound but unquantified effects on the ecological community surrounding the solar facility**. (Emphasis added.)"[48]

(4) In their preliminary assessment of avian mortality at utility-scale solar energy facilities in the United States, Walston et. al.[49] summarize their findings on impacts to birds as follows, "Utility-scale solar energy facilities in the United States require large spatial footprints (between 1.4 and 6.2 ha of land per MW of electric production) **and are projected to require a total of 370,000 - 1,100,000 ha of land by 2030, mostly in the arid regions of the southwestern states** [11]...Recent studies have suggested that utility-scale solar developments may represent a source of mortality for wildlife such as birds [12]. There are currently 2 known types of direct solar energy-related bird mortality [9,12,13]: 1. Collision-related mortality - mortality resulting

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[45] McCrary, M. Mckernan, Schreiber, R., Wagner, W., and Sciarrotta, T. (1986). Avian Mortality at A Solar Energy Power Plant. *J. Field Ornithology*, 57(2), 135-141.

[46] *Ibid.*

[47] Brown, W. M., & Drewien, R. C. (1995). Evaluation of Two Power Line Markers to Reduce Crane and Waterfowl Collision Mortality. *Wildlife Society Bulletin* (1973-2006). 23(2): 217–227.

[48] Lovich, J. E., & Ennen, J. R. (2011). Wildlife Conservation and Solar Energy Development in the Desert Southwest, United States. *Bioscience*, 61(12): 982–992.

[49] Walston, L. et. al. 2016. A preliminary assessment of avian mortality at utility-scale solar energy facilities in the United States. *Renewable Energy*. 92: 404-414. doi:10.1016/j.renene.2016.02.041

from the direct contact of the bird with a solar project structure(s). This type of mortality has been documented at solar projects of all technology types…different solar technologies and project designs may influence avian mortality risk. For example, project designs that utilize solar collectors that reflect polarized sunlight in such a way so as to be perceived as waterbodies, may attract birds and their prey (e.g., insects), thereby increasing the risk of bird collisions with project structures [10,12,14,20](Emphasis added)."

This summary underscores the cumulative impacts that current and proposed desert solar projects will have on birds in the California desert southwest. Using Fesnock et. al.'s conservative findings[50] on bird deaths per acre at California desert solar facilities, and the projected acreage slated for development by 2030, bird deaths would number between 548,000 and over 4,347,000. A fraction of these deaths within one species could incur significant impact to an entire population, especially of species already rare or declining.

The report also makes recommendations to better assess avian impacts caused by industrial solar sites: "There is a need for more standardized, consistent, and science based avian monitoring protocols ... Standardized monitoring methodologies will improve the scientific certainty of conclusions about avian mortality. As efforts get under way to improve the quality of avian mortality data collected from USSE facilities, researchers should focus on development of more effective inventory and monitoring techniques".[51] 26-29

As such all industrial solar facilities, this Project included, should be required not only to adopt a bird and bat conservation program scripted within the DEIR/S, for reasons iterated above the details of such a plan, including performance and success criteria, should be part of the final impact assessment available for public review. Such a plan should include scientific data collection of avian injury and mortality for the life of the project, not only to assess long term and cumulative impacts, but to contribute to a much-needed database to enhance future mitigation strategies.

(5) The U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy and the U.S. Department of the Interior's Bureau of Land Management published their Solar Energy Development Programmatic EIS PEIS, which concluded that "**Since birds are prone to collisions with reflective surfaces, it would be expected that a utility-scale solar energy project could cause significant bird mortality. Glare could possibly disorientate a bird in flight and cause it to collide with solar energy project facilities or other objects.**"[52] This conclusion by the federal government agencies responsible for overseeing wildlife impact mitigation on public lands further exemplifies the accepted reality that significant bird collision risks are created and

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[50] Fesnock, A., Huso, M., and Allison, L. (2016). Background Avian Mortality across the California Desert Region: A Pilot Study. *BLM Avian Solar Symposium,* August 2017. http://blmsolar.anl.gov/program/avian-solar/symposium/doc/Fesnock_Background_Mortality.pdf

[51] *Ibid.*

[52] DOE, DOI. Final Solar Programmatic Environmental Impact Statement. 2012. Retrieved from: http://solareis.anl.gov/index.cfm pp. 5- 82.

enhanced by the presence of reflective solar arrays at solar industrial projects, regardless of differences in design of the panels between projects.

(6) In their comments to the Palo Verde Solar DEIR, the USFWS confirms that there is growing evidence of the impacts from what is known as the "lake effect", especially for water-associated birds and other species seeking migratory stopover habitat, and that projects in proximity to this project's site are among those reporting the highest mortality of water-associated birds.[53] They conclude that cumulative impacts to birds could be significant for various species, and would warrant project-specific systematic monitoring and mitigation via a bird and bat conservation plan. They go on to suggest some strategies that should be incorporated into such a plan, while emphasizing that any such Plan should provide enough detail to demonstrate standard scientific rigor, appropriate methodology, and consistency with other similarly approved plans.

(7) In the 2015 National Renewable Energy Laboratory's review of avian monitoring and mitigation information at existing utility-scale solar facilities, the report summarized their findings of 7 solar sites by stating, "One commonality among utility-scale solar facilities of all technology types is that they occupy relatively large spatial footprints to capture the sun's energy. The development of utility-scale solar facilities, therefore, represents a large human land use in the environment, which has the potential to affect birds and bird communities in a number of ways and during all project phases (construction, operations, and decommissioning). The range of potential impacts from utility-scale solar projects on birds and other wildlife has been evaluated in the literature (e.g., Lovich and Ennen 2011; Hernandez et. al. 2014) and in the *Final Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States* (BLM and DOE 2012). Like all industrial activities, utility-scale solar energy development has the potential to directly and indirectly impact birds and bird communities in a number of ways. This report summarizes existing information of direct avian fatality at utility-scale solar facilities, which represents one of several impact factors. There are currently two known types of direct solar-related bird fatalities (McCrary et. al.1986; Hernandez et al. 2014; Kagan et al. 2014): 1. Collision-related fatality—fatality resulting from the direct contact of the bird with a project structure(s). This type of fatality has been documented at solar projects of all technology types."[54] 26-29

The review further summarizes, "Collisions may occur at any facility (solar or otherwise) with aboveground structures. In the case of solar plants these may include transmission lines, cooling towers, PV panels and poles, trough systems, heliostats, fencing, and buildings. At PV and CSP facilities, collision hazards to birds are greatest among the solar field arrays...PV facilities may attract some species of birds through what has been called the "lake effect" (Kagan et al. 2014), whereby migrating birds perceive the reflective surfaces of PV panels as bodies of water and collide with project structures as they attempt to land on the panels.(Emphasis added)."[55]

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[53] RTC p. 3, A6-6 Retrieved from: https://planning.rctlma.org/Portals/0/Postings/CUP3684EIR532/Volume%201%20-%202%20Response%20to%20Comments.pdf?ver=2017-08-18-095828-407

[54] Walston, L., Rollins, K., Smith, K., LaGory, K. (2015). Review of Avian Monitoring and Mitigation Information at Existing Utility-Scale Solar Facilities. Retrieved from: http://www.evs.anl.gov/downloads/ANL-EVS_15-2.pdf p. 10

The Laboratory report's data collected from monitoring seven solar site reveal 1,384 bird mortality detections over the course of 6 months to three years, depending on the individual project report, with 11.2% of those being water dependent birds, and the majority reported as collision related. All project sites were characterized by presence of various types of desert scrub habitats native to California desert systems, similar to those identified on the Project site.

(8) A California Department of Fish and Wildlife (CDFW) grant proposal, written in cooperation by the USFWS and USGS, makes the determination that, "Utility-scale solar projects, totaling many tens of thousands of acres, have been approved and are currently proposed within the range of Yuma Clapper Rail. Photovoltaic, solar thermal trough, and solar thermal power tower technologies reflect ambient light during the day and night, producing a "lake effect" that attracts numerous water-associated birds, including numerous rails... Since no water-associated birds were reported in pre-project avian surveys in desert scrub habitat on these project sites, and suitable habitats were not present, we conclude these solar technologies pose an "attractive nuisance" to which rails and other water-associated birds are particularly vulnerable. In addition to collision with solar panels, rails and other water-associated birds have died by collisions with fences and transmission lines, and entanglement in netting over water evaporation ponds. As such, existing and proposed utility-scale solar projects and their associated infrastructure introduce new sources of mortality to dispersing rails [and other water-associated birds], which cumulatively could be significant enough to function as population sinks for the life of these projects".[56] This statement reinforces the fact that bird collisions to the facility may not only cause significant impacts to birds of many types (sensitive and endangered species, residents, migrants, passerines, water dependent birds, etc.), but could significantly impact birds at the population level. 26-29

(9) Fourteen wildlife and other governmental state and federal agencies are coordinating to address what they consider to be emerging issues related to potential avian-solar impacts under the umbrella of the Multi-agency Avian-Solar Collaborative Working Group[57]. In doing so the agencies involved have produced a draft Plan[58] that includes justification and details regarding reduction of impacts caused by bird strikes to solar panels. One part of this justification is in response to the bird mortality reports outlined in Table 1, among others. The complete list of

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[55] *Ibid.* p.30

[56] CDFW. (2016). Demographic tool for assessing the impact of increased mortality rates on Yuma Clapper Rail (*Rallus longirostris yumanensis)* and California Clapper Rail (*R. l. obsoletus*) populations. Unpub. ESA Section 6 Grant.
See also Marty, J. and Unnasch, B. (2015) Yuma Clapper Rail (*Rallus longirostris yumanensis*) (CLRA) Basic Conceptual Ecological Model for the Lower Colorado River. Lower Colorado River Multi-species Conservation Program. pp. 89. doi:10.13140/RG.2.2.34990.51528
https://www.researchgate.net/publication/307965556_Yuma_Clapper_Rail_Rallus_longirostris_yumanensis_Dickey_CLRA_Basic_Conceptual_Ecological_Model_for_the_Lower_Colorado_River

[57] See http://blmsolar.anl.gov/program/avian-solar/docs/Draft_Avian-Solar_Science_Plan.pdf

[58] See http://blmsolar.anl.gov/program/avian-solar/docs/Draft_Avian-Solar_Science_Plan.pdf

> agencies in this Working Group include: Arizona Game & Fish Department, Bureau of Indian Affairs, Bureau of Land Management, California Department of Fish & Wildlife, California Energy Commission, California Public Utilities Commission, National Park Service, Nevada Department of Wildlife, U.S. Department of Energy, U.S. Department of Defense, U.S. Department of the Interior, Solicitor's Office, U.S. Fish & Wildlife Service, U.S. Geological Survey.

The reports referenced above provide conclusive evidence that the risks of PV panel avian collisions are real, significant, have been observed by scientific methodologies incorporated into bird and bat monitoring protocols, and quantifiable to the extent required for estimating compensatory mitigation needs.

Finally, in their comments to this DEIR/S, USFWS states that,

"The Project site occurs in the Lower Colorado River Valley, which forms a major branch of the Pacific Flyway (Rosenberg *et al.* 1991). The diverse aquatic, wetland, riparian, agricultural, and desert habitat types in this area provide permanent and seasonal refuge to hundreds of resident and migratory birds (Shuford *et al.* 2002). Utility-scale PV, parabolic trough, and power tower projects that are currently under construction or in operation are reporting avian mortalities and injuries resulting from collisions and other accidents with various project features, including solar panels or heliostats, evaporation ponds, fencing, electrical distribution lines onsite, and gen-tie lines to regional substations on the grid. As indicated in the draft EIS/EIR, post-construction avian mortality monitoring from nearby utility-scale solar facilities has documented bird fatalities. However, the avian mortality monitoring data described in the draft EIS/EIR only considers raw data that are not corrected for searcher efficiency and carcass persistence. These data are useful for considering which project features are associated with mortalities, but do not provide a good metric for evaluating the total impact to migratory bird species. For example, the raw data used in the draft EIS/EIR states that mortality monitoring at Desert Sunlight detected 432 total mortality events. However, to represent a more accurate estimate of mortalities, the numbers should reflect the searcher bias and carcass removal rates. For example, in Desert Sunlight's post-construction avian mortality monitoring annual report, the adjusted total bird fatality estimate was 1,610 (CI: 1,118 – 3,671) fatalities in year one and an estimated 1,594 (CI: 1,271 – 2,116) fatalities in year two (WEST 2018). Therefore we recommend the final EIS/EIR provide the corrected data to provide a more accurate cumulative evaluation of effects to migratory birds. Lastly, contrary to information in the draft EIS/EIR the avian mortality monitoring period for Desert Sunlight was conducted within a two-year period, not a five-year period. Therefore some calculations in Table 4.4-4 in the Draft EIS/EIR are incorrect and should be updated in the final EIS/EIR or an explanation should be provided on how the five-year timeframe was calculated. Based on the avian monitoring data for other nearby solar energy facilities, the Desert Quartzite Project is likely to contribute to an increase in avian fatalities through collision with PV panels, fencing, and gen-tie lines. The draft EIS/EIR includes a requirement for development of a Bird and Bat Conservation Strategy (BBCS) but lacks details. To help reduce impacts to migratory birds we recommend the BBCS include, at a minimum, a nesting bird management plan that addresses all migratory birds and systematic post-construction mortality monitoring, including searcher 26-29 efficiency and carcass persistence trials, and adaptive management measures as necessary to address avian impacts. See the enclosure for more information on developing a BBCS."[59]

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To reduce adverse effects to migratory birds, USFWS recommends the following measures:

- Undergrounding of on-site distribution lines.
- The use of monopoles for any above-ground distribution lines and gen-tie lines.
- Marking fences to reduce avian collisions with newly constructed fences.
- Avoiding the use of lattice-type structures or placing external ladders and platforms on project infrastructure to minimize perching and nesting opportunities for birds on site.
- Avoiding the use of meteorological towers that require use of guy wires, or where this is not feasible, placing markers on the guy wires to increase visibility of these hazards to birds.

I agree with the comments and requests by USFWS. However, to completely mitigate Project impacts to resident and migratory birds due to strikes to infrastructure, the DEIR/S needs to revisit and more thoroughly analyze the impacts described herein, including exactly how and what type of compensatory mitigations will be established and offset these impacts to below significant for all of the many species involved, including migrants that do not utilize the habitat onsite for breeding.

d. The DEIR/S Underestimates Impacts to the Endangered Willow Flycatcher

26-30

As noted above, the DEIR/S fails to discuss the impact of the Project on the willow flycatcher (*Empidonax traillii*) despite it being recorded as present in Appendix M.[60] The willow flycatcher is an endangered species under the CESA, and the southwestern willow flycatcher is protected under the federal ESA. Not only is the willow flycatcher is reported in the proposed project site area in the fall of 2014, it has been recorded regularly in the area.[61]

Willow flycatchers were also observed and recorded close to the Project site at 22nd Avenue Oasis West of Stephenson Blvd (an eBird hotspot) according to an eBird listing (reviewed by ornithologists prior to posting).[62] Willow flycatchers are known to migrate along the Colorado River,[63] and mortalities of other species of flycatchers have been documented on the nearby Desert Sunlight PV project.[64] As discussed in detail above, migrant birds mortalities are a predictable significant impact to every solar industrial site, therefore the County and BLM should consult with the state (California Department of Fish and Wildlife, CDFW) and federal (U.S. Fish and Wildlife Service, USFWS) wildlife agencies to determine what is necessary to reduce impacts associated with the proposed project to both protected species and subspecies 26-30

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[59] USFWS. (Nov 8, 2018) Comment Memorandum on the Draft Environmental Impact Statement for the Desert Quartzite Solar Project, Riverside County, California (CACA-49397). https://eplanning.blm.gov/epl-front-office/projects/nepa/68211/166320/202702/Indexed_DQSP_Comment_24_11-8-2018_USFWS_508.pdf

[60] Appendix M-9

[61] Flanagan, P. (June 2014). The Impacts of Energy Projects on Migrating Birds: New Tool Available to Assess Migratory Bird Species. *The Desert Report, 16*-19. http://www.desertreport.org/wpcontent/uploads/2014/05/DR_Summer_2014.pdf

[62] See https://ebird.org/pnw/hotspot/L1842425?yr=BIGDAY_2017a&m=&rank=mrec

[63] USFWS. (2013). Designation of Critical Habitat for Southwestern Willow Flycatcher; Final Rule (78FR353) http://www.gpo.gov/fdsys/pkg/FR-2013-01-03/pdf/2012-30634.pdf at PDF pg. 11

[64] Kagan, R.A., T.C. Viner, P.W. Trail, E.O. Espinoza. (2014). Avian mortality at solar energy facilities in southern California: a preliminary analysis. National Fish and Wildlife Forensics Laboratory. Pp. 28.

e. Special Status Species Detected Onsite are Omitted in the DEIR/S Impact and Mitigation Analysis

The DEIR/S summarizes special-status wildlife species with potential to occur within the study area on Table 3.4-1. However, several such species that were observed during surveys[65] are not included in this table, specifically: American white pelican (CA Species of Special Concern), Merlin (CDFW Watch List), Mountain plover (BLM Sensitive, CA Species of Special Concern), Prairie falcon (CDFW Watch List and Bird of Conservation Concern), Sandhill Crane (Subspecies *canadensis* is a CA Species of Special Concern, subspecies *tabida* is state Threatened and BLM Sensitive Species), Short-eared owl (CA Species of Special Concern), White-faced ibis (CDFW Watch List), Willow flycatcher (State Endangered/ Federally Endangered depending upon subspecies, not indicated), Yellow warbler (CA Species of Special Concern), and Yellow-headed blackbird (CA Species of Special Concern). 26-31

The omission of these species, including a federal ESA and California ESA protected species, from impact analyses is a serious oversight on the part of the DEIR/S. The discussion above demonstrates in detail the high risk of migratory species being harmed by the Project, therefore the need for further analysis of impacts should not be limited to the presence of breeding or foraging habitat of these species present onsite. As such the Applicant needs to completely revisit its analysis of impacts to sensitive migratory (and non-migratory) birds to include those above. Such analyses should not be deferred to the future by way of a theoretical mitigation Plan, as discussed previously in this letter, and should include specific details regarding how compensatory mitigation will reduce impacts to these rare, threatened, and endangered species to below significant.

f. Significant Impacts to Desert Bighorn Sheep and Burro Deer are Underestimated and Remain Unmitigated

The DEIR/S says "Although impacts on wildlife movement are anticipated under Alternatives 1, 2, or 3, these impacts would be less than significant with mitigation.... Mitigation Measures WIL-1 (Mojave desert tortoise fencing), WIL-4 (Mojave desert tortoise habitat acquisition), and WIL-9 (burrowing owl 26-32

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http://docketpublic.energy.ca.gov/PublicDocuments/09-AFC07C/TN202538_20140623T154647_Exh_3107_Kagan_et_al_2014.pdf

[65] Appendix M p. 186-188

habitat acquisition) would reduce remaining potential impacts to a less than significant level by directing wildlife movement around the Project (via the site perimeter fencing), and building upon a consolidated block of conserved open space suitable for maintaining movement corridors (via the Project's habitat acquisition contribution). Post-mitigation, impacts would be less than significant."[66] It goes on to state that, "Fencing that is proposed around the Project, other local solar projects, and I-10 create barriers to wildlife movement that would alter, but not likely impede, the movement of large wildlife species such as Desert bighorn sheep, burro deer, mountain lion, or other highly mobile species. ... the cumulative projects are not expected to present a barrier to regional movement, because these animals have the ability to move outside of the fenceline of the projects. In addition, the largest impact to wildlife movement associated with the cumulative projects is expected to be that posed by I-10. The contribution of the Project to the larger cumulative impact posed by the highway is expected to be minimal." However, the DEIR/S also notes that "The McCoy Mountains Bighorn Sheep Wildlife Habitat Management Areas (WHMA) is located approximately 0.5-mile north of the Study Area's ROW Boundary, immediately north of Interstate 10, and the Mule Mountains WHMA is located approximately 0.9-mile southwest of the Study Area's ROW Boundary. These two WHMAs (shown in Figure 3.4-10) are currently listed as unoccupied range (BLM 2002)."[67] Finally, the DEIR/S concludes that, "direct and indirect construction impacts to burro deer include the loss of foraging habitat in the *Parkinsonia florida-Olneya tesota* alliance, vegetated swales, and the *Larrea tridentata* and *Larrea tridentata-Ambrosia dumosa* alliances, and potential barriers to local and regional deer movement...the Project would not present a barrier to regional movement because deer still could disperse around the site to the west, north, and south."[68] 26-32

To begin with, this statement is misleading. A model for intactness does not override the fact that the species' microphyll habitat is onsite, and that sheep and deer would use the site as a corridor, especially when burro deer are highly dependent upon microphyll woodlands (desert washes with trees, usually ironwood and Palo Verde).[69] To say they can just go around as if doing so would impose no deleterious cost to individual animals is misleading given the site is almost 9 square miles, and dispersing this far to reach appropriate forage, shade, cover, etc. can incur a negative impact to individuals. The site is bordered to the southwest by mountains, to the southeast by agricultural fields. To say there will be minimal impact with the development of a vast development of this size, with its associated roads that will dissect and disrupts this corridor, especially for bighorn sheep that are known to be incredibly sensitive to human presence, is simply not based in fact. Additionally, to say the area is unoccupied based upon 17 year-old data is outdated and inappropriate, as is claiming that there are no significant cumulative impacts despite the cumulative impacts readily identified. The DEIR/S does not provide a substantial argument or evidence for this claim, therefore impacts to Desert bighorn sheep and burro deep remain unmitigated.

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[66] DEIR/S 4.4-21

[67] *Ibid*. 3.4-2

[68] DEIR/S 4.4-11

[69] Marshal, J. P., V. C. Bleich, P. R. Krausman, M. L. Reed, and N. G. Andrew. (2006). Factors affecting habitat use and distribution of mule deer in an arid environment. *Wildlife Society Bulletin* 34:609–619. *See also* Marshal, J. P., V. C. Bleich, P. R. Krausman, A. Neibergs, M. L. Reed, and N. G. Andrew. 2012. Habitat use and diets of mule deer and feral ass in the Sonoran Desert. *Southwestern Naturalist* 57:16-25.

g. Project Impacts to Western Burrowing Owls are Underestimated and as a Result Unmitigated.

The DEIR/S has confirmed there are Western burrowing owls, a protected California Species of Special Concern, on the Project site. This included detection of an incredibly high number of burrows; biologists found 70 burrows deemed readily active, usable and/or had owls in residence. And, as Figure 3.4-4 of the DEIR/S demonstrates, observations of burrowing owls along with those of usable, recent burrows are spread throughout thousands of acres of the Project site within many acres of "suitable" habitat.

26-33

By way of their discussion of the various ways in which the species is impacted by development, the DEIR/S acknowledges there will be direct, indirect, and cumulative impacts to owls by the Project. Yet the DEIR/S fails to demonstrate *exactly* how it will mitigate these significant impacts throughout such a wide swath of habitat and known occurrence, and instead defers most planning to the future by simply stating a Protection and Mitigation Plan will be written at some point in the future. For reasons iterated in detail above, this deferral is completely inadequate.

The DEIR/S also claims WIL-9 describes BUOW mitigation, where it states this theoretical Plan shall "identify appropriate off-site areas for creation or enhancement of burrows to support passive relocation of burrowing owls, provide details for implementing the passive burrow exclusion and relocation of burrowing owls from the Project site, and specify reporting protocol for any implemented burrowing owl mitigation measures. Active translocation may be considered..." There can be no review of these plans, or their efficacy, without seeing the details in the DEIR/S. Second, the DEIR does not evaluate known, potentially significant impacts associated with owl eviction. In fact, the CDFW does not recommend passive displacement of owls as a mitigation technique. To the contrary, CDFW's Staff Report states:

> "Exclusion in and of itself is not a take avoidance, minimization or mitigation method. Eviction of burrowing owls is a potentially significant impact under CEQA...Therefore, exclusion and burrow closure are not recommended where they can be avoided. The current scientific literature indicates consideration of all possible avoidance and minimization measures before temporary or permanent exclusion and closure of burrows is implemented, in order to avoid take."[70]

Contrary to guidance in the Staff Report, the DEIR/S indicates the Project will displace owls from their burrows without having to consider "all possible avoidance and minimization measures." Neither has the Applicant prepared a Burrowing Owl Exclusion Plan (nor do they propose who would script such a plan), and so once again a complete analysis of mitigation measures is precluded.

The CDFW's guidelines for adequate impact assessment of burrowing owls include the following steps:[71]

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[70] California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation. p. 10 https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843

[71] *Ibid*, pp. 6-8

(a) Define the problem including type and extent of disturbance, duration and timing of disturbance, visibility of disturbance, sensitivity and ability to habituate, and influence of environmental factors. They suggest identifying and addressing all potential direct and indirect impacts to burrowing owls, regardless of whether or not the impacts will occur during the breeding season.

(b) Describe the type and extent of the disturbance in terms of "impacts on occupied, satellite and unoccupied burrows including acreage to be lost (temporary or permanent), fragmentation/edge being created, increased distance to other nesting and foraging habitat, and habitat degradation. Discuss any project activities that impact either breeding and/or non-breeding habitat which could affect owl home range size and spatial configuration, negatively affect onsite and offsite burrowing owl presence, increase energetic costs, lower reproductive success, increase vulnerability to predation, and/or decrease the chance of procuring a mate."

(c) Describe the duration and timing of impact impacts on occupied, satellite and unoccupied burrows including acreage to be lost (temporary or permanent), fragmentation/edge being created, increased distance to other nesting and foraging habitat, and habitat degradation. Discuss any project activities that impact either breeding and/or non-breeding habitat which could affect owl home range size and spatial configuration, negatively affect onsite and offsite burrowing owl presence, increase energetic costs, lower reproductive success, increase vulnerability to predation, and/or decrease the chance of procuring a mate. 26-33

(d) Assess the visibility and sensitivity of the owl(s) at/ near the site to ongoing visual or audible disturbance.

(e) Discuss the environmental factors that "that could be influenced or changed by the proposed activities including nest site availability, predators, prey availability, burrowing mammal presence and abundance, and threats from other extrinsic factors such as human disturbance, urban interface, feral animals, invasive species, disease or pesticides.

(f) In respect to the details provided as directed, "evaluate the potential loss of nesting burrows, satellite burrows, foraging habitat, dispersal and migration habitat, wintering habitat, and habitat linkages, including habitat supporting prey and host burrowers and other essential habitat attributes."

(g) Asses the consequences of cumulative effects of the Project, and nearby projects, on the local and regional populations of owls.

(e) Create mitigation goals that provide a standard by which to measure mitigation success.

The DEIR/S's deferment of detailed burrowing owl measures to the future clearly does not come close to meeting the recommendations for impact analysis according to the oversight agencies, nor does Mitigation Measure WIL-9; which as written which is potentially conciliatory to development over the actual needs of the owls. For instance, the DEIR/S states that an avoidance buffer will be created if owls are observed during non-breeding season. However, "The appropriateness of buffer distances shall be carefully reassessed and relaxed or modified, on a case-by-case based on a review by the Qualified Biologist, and shall depend on existing conditions (e.g., vegetation/topographic screening and current disturbance regimes) and/or future development plans (e.g., increased or intensified construction activities)."[72] If owls are detected during breeding season, the DEIR/S is even less precise about actions to be taken, claiming "If construction activities would occur within 656 feet of the occupied burrow during the nesting season…the Qualified Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall make recommendations to minimize or avoid such disturbance." As noted previously in this letter, such subjective determinations of disturbance once birds are nesting are inappropriate and a time contrary to actual mitigation. Additionally, buffer size and appropriateness should be confirmed by oversight agency personnel, not a biologist hired by the developer, where they can (and often are) asked to modify a buffer according to construction activity contingencies that may (and have, in my direct observations) be motivated by construction timelines over a bird's nesting viability.

The DEIR/S erroneously states that, "Operation and maintenance actions have a low likelihood to affect burrowing owls because activities would largely occur within the developed solar plant site. Burrowing owls have the potential to return to the Project area, following the completion of construction. However, if the burrowing owl does return to the Project area as a resident species, it would likely inhabit the periphery of the development footprint in either natural burrows or manmade structures (e.g., drainage culverts, debris piles, etc.). O&M activities are not expected to remove burrowing owl breeding habitat and would occur only on Project access roads and within work areas."[73] 26-33

This claim is at best is misleading. First, burrowing owls, like most bird species, have high natal site fidelity and are thus *highly* likely to return to the area in which they were born, especially in light of the fact that burrowing owls take full advantage of burrows in native and highly altered agricultural and ruderal habitats if in close proximity to adequate prey. Project development will clearly remove owl habitat onsite, so to state O&M will not impact owls given their proclivity to return to their natal site is incorrect. The DEIR/S has not provided the necessary details regarding how resident burrowing owls will be addressed if they arrive during O&M, which is also mistakenly considered separate than impacts from access roads and work areas. On this note, the evidence does not support the claim that burrowing owls would only inhabit the periphery of the development, given the fact that they will reuse and excavate burrows made by other species, including, rodents that may infiltrate the site at any time and anywhere there is sufficient ground cover for burrowing.

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[72] Appendix G-37

[73] DEIR/S 4.4-16

26-33 The discussion above in this letter regarding the impacts of solar arrays, gen-tie lines, and other infrastructure to birds via strikes, in addition to Table 1, provide clear evidence that the entire development footprint of industrial solar developments cause impacts to burrowing owls - during operation - in the form of mortalities and negative behavioral impacts as documented on various solar farms. When monitoring solar facilities in the Sonoran desert I observed several burrowing owls that had entered grounds where they had been relocated previously, arriving next to the solar arrays to nest and forage, including areas otherwise known as O&M grounds where maintenance activities included major ground disturbance for vehicle transport, flood control, and other excavations that disturbed burrowing owl burrows. Over the course of just two years, 703 bird mortalities were reported at the CVSR desert solar facility, including three burrowing owls; this despite burrowing owl "mitigation measures" approved by the agencies being in place. This predicts a mortality of 10,545 birds for the life of a 30-year facility, including 45 burrowing owls. In summary, the DEIR/S fails to describe in adequate detail how it will mitigate this high potential rate of owl disturbance in the form of direct, indirect, and cumulative impacts.

26-34

h. The DEIR/S Provides Inadequate Analysis and Incomplete Mitigation of Impacts to the Mojave Fringe-toed Lizard (*Uma scorparia*) (MFTL)

i. Subheading needed

The DEIR/S states that, "Direct impacts to Mojave fringe-toed lizards during construction of the solar facility, gen-tie line, distribution line, and associated access roads would occur due to removal of habitat and accidental mortality of lizards from vehicle strikes. The Mojave fringe-toed lizard has wide distribution in portions of the gen-tie line alignment located south of I-10, with 135 individuals identified in the Alternative 1 Study Area during surveys (107 within the solar facility footprint, 28 along the gen-tie corridor). Within 150 feet of these documented occurrences, Alternative 1 would directly impact 78 acres of occupied habitat...Alternative 1 would directly impact 3,692 acres of potential habitat [on the project site]. It is uncertain whether sufficient private lands meeting the habitat criteria may be available for purchase. Therefore, compensation required under Mitigation Measure WIL-10 may be accomplished through acquisition and management of off-site habitat or, if suitable compensation habitat is not available, through off-site habitat enhancement and restoration."

According to USFWS comments to the nearby Palo Verde Mesa Solar Project DEIR, the Mojave fringe-toed lizard "is designated as a Sensitive Species by BLM and a Species of Special Concern by the State. These designations recognize the general rarity of this species, which is vulnerable because a proportionally small amount of suitable habitat is scattered in a relatively few, small, isolated patches of sandy habitats across the Sonoran and Mojave deserts in California. These patches of sand-dominated habitat rely on aeolian sand transport systems, such as the several sand transport corridors in the Chuckwalla Valley, which provide periodic pulses of loose blows and from upwind sand sources."[74] Given the observations of MFTL onsite, and the extensive research describing local habitat requirements for this species, there is no question that the Projects' sand dune and partially stabilized sand dune habitat is crucial for the Mojave fringe-toed lizard. What is not emphasized is how the project could impact four Sand Migration Zones (SMZs): Wiley's Well Basin, Mule, Palowalla and Powerline SMZs, including in the northern part of the site and along the gen-tie line to the Colorado River Substation, where sand migrations in some areas is denoted as moderate to high.[75] There is no quantitative analysis within the DEIR/S regarding how direct and indirect impacts to these Zones will impact the MFTL, nor exactly how they would be mitigated as a result.

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[74] USFWS Comment letter to Palos Verde Mesa Solar Project DEIR, p. 62 https://planning.rctlma.org/Portals/0/Postings/CUP3684EIR532/Volume%201%20-%202%20Response%20to%20Comments.pdf?ver=2017-08-18-095828-407

The DEIR/S proposes 3: 1 compensatory mitigation for the MFTL. It is important to note that given the problems other Projects have had meeting mitigation success criteria for sand dune habitat supporting viable subpopulations of MFTL over the long term, other solar energy projects known to impact MFTL habitat have established mitigation ratios higher than 3:1 for direct impacts to occupied habitat in combination with other compensatory mitigation for indirect impacts. For example, the Desert Sunlight project was required to mitigate unavoidable impacts to the MFTL habitat up to 5:1 for direct impacts to all occupied MFTL habitat and lesser ratios for indirect impacts, while also creating a detailed MFTL Protection Plan.[76] Despite the fact that this Project will incur a much higher degree of impacts (over 3,700 acres) than Desert Sunlight, the DEIR/S provides no explanation for failing to provide a detailed MFTL Protection Plan, including key addressing key factors including why only a 3:1 mitigation ratio is justified as adequate for direct impacts, and how construction will impact downwind habitats already denoted as moderate to highly migratory sand. Habitat fragmentation and resultant edge effects are known to decrease fringe-toed lizard subpopulation viability, yet another reason why a detailed evaluation (Plan) should be available for review within the EIR/S, one that evaluates population and habitat related performance and success criteria -including that for potential restoration proposed, for compensatory mitigation.[77] 26-34

In addition to these omissions for mitigation, the DEIR/S summarizes its mitigation of MFTL as follows, "It is also uncertain whether off-site enhancement and restoration can feasibly and effectively restore natural sand transport function and aeolian sand habitat values. Therefore, with implementation of Mitigation Measure WIL-10 to the extent it is feasible, the Proposed Action's direct effects on sand transport may remain only partially mitigated...Therefore, compensation required under Mitigation Measure WIL-10 may be accomplished through acquisition and management of off-site habitat or, if suitable compensation habitat is not available, through off-site habitat enhancement and restoration (e.g., by controlling weeds or off-highway vehicle access). However, it is also uncertain whether off-site enhancement and restoration can feasibly and effectively restore natural sand transport function and aeolian sand habitat values. Therefore, with implementation of Mitigation Measure WIL-10 to the extent it is feasible, the Proposed Action's direct effects on sand transport may remain only partially mitigated."[78]

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[75] Appendix O Plate ES-3

[76] Desert Sunlight FEIS 4.4-40 https://www.energy.gov/nepa/downloads/eis-0448-final-environmental-impact-statement

[77] Barrows, C.W., M.F. Allen and J.T. Rotenberry. (2006). Boundary processes between a desert sand dune community and an encroaching suburban landscape. *Biological Conservation* 131: 486-494. https://pdfs.semanticscholar.org/574f/b229ffcf6f8d19d7dba74349c6fb40530d3b.pdf

This lack of proposed adequate mitigation to thousands of acres of potentially occupied habitat within the Project site warrants that the Applicant consider alternatives that will avoid impacts to the existing MFTL populations including related regional sand movement zones, or select the No Project Alternative.

ii. Population Status and Resultant Direct Impacts to MFTL are Underestimated

26-34

Despite the Applicant conducting herpetofaunal surveys for the Project site six and seven years ago, it must be noted that "Visual Encounter Surveys" of transects can never completely provide an accurate census of an extremely difficult to detect species like the MFTL. Even when not hibernating, the animals are incredibly cryptic and spend a good deal of time buried under the sand for physiologic and behavioral reasons, including predator avoidance. They have been described in the species account for the BLM as having "interesting behavioral adaptations for their dune habitat. Most notable is their sand burial behavior...fringe-toed lizards tend to frequently bury themselves within 4-6 cm of the sand surface."[79] The species' morphology itself demonstrates its unique evolutionary adaptations for spending a lot of time under sand, including a countersunk lower jaw, valved nostrils, keeled supralabials, enlarged and imbricate shoulder scales, and a dorsoventrally compressed body. As fringe-toed specialists describe, "the dorsal network of dark ocelli on a yellowish ground color make these lizards extremely cryptic on the sandy substrate". [80] (See Figs 1- 3). Due to their cryptic nature and difficulty to detect, many species of reptiles are historically underserved in conservation management plans, including those dependent on environmental impact analyses.[81,82,83,84]

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[78] DEIR/S 4.4-7,8

[79] Hollingsworth, B. and Beaman, K. (2001). Mojave fringe-toed lizard (*Uma scoparia*)." Prepared for the Western Mojave Plan. Bureau of Land Management, Moreno Valley, California.

[80] *Ibid.*

[81] Gerson, M. M. 2004. Aspects of the ecology of a desert lizard, *Callisaurus draconoides* (blainville 1835), in Joshua Tree National Park with an emphasis on home range and diet (Order No. 3146172).

[82] Heaton, J. S. 2002. The LizLand model: Geomorphic landform and surface composition analysis of lizard habitat in the California Mojave desert (Order No. 3029564).

[83] Williams, A. K. 2004. The influence of probability of detection when modeling species occurrence using GIS and survey data (Order No. 3123715).

[84] Rosen, P. C. 2000. A monitoring study of vertebrate community ecology in the northern Sonoran desert, Arizona (Order No. 9965915).

26-34

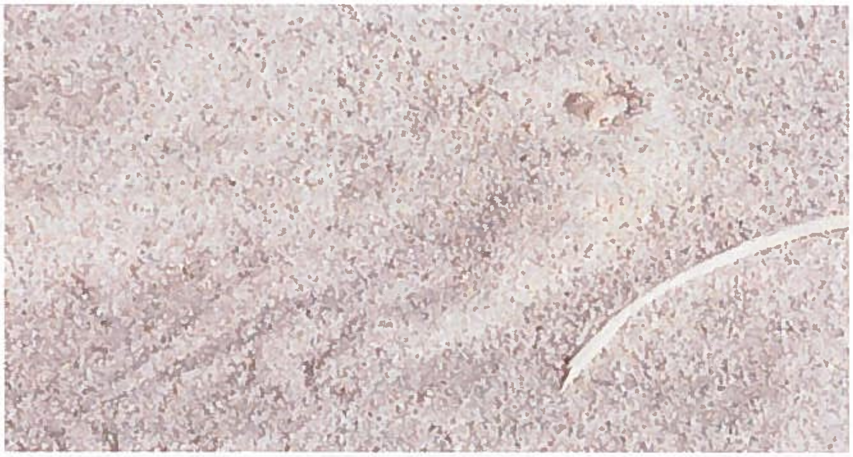

Figure 1 (USFWS)

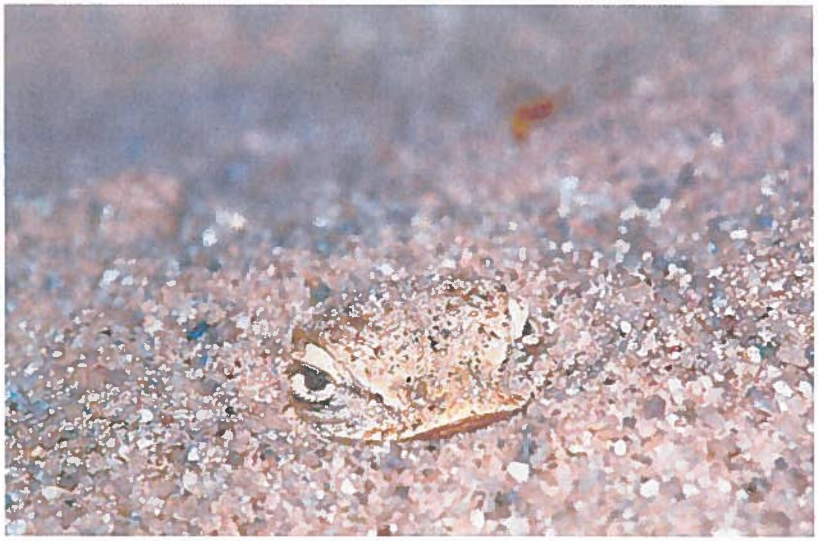

Figure 2 (W. Ervin)

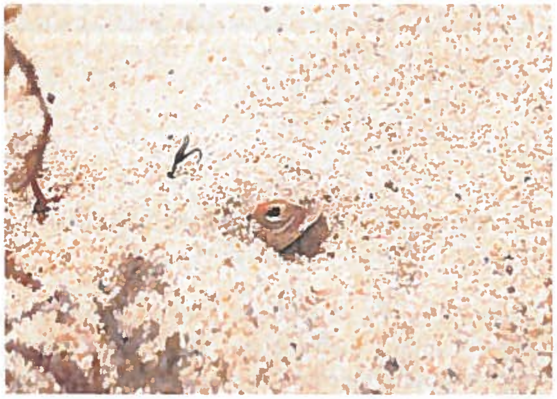

Figure 3 (C. Titus)

New roads and access driveways are constructed to create access to solar development sites, which increases the risk of direct morality of lizards and snakes by vehicles, causes habitat fragmentation and potential barriers to gene flow, and makes previously inaccessible areas available to vehicles including off-road vehicles. Solar sites are inevitably surrounded by fencing of various kinds during and post-construction, which may serve to exclude some individual animals, but also serves to trap or funnel other small species - including reptiles seeking shade - within a construction site. Additionally, industrial scale solar projects are known to alter the microclimate of a region. "It has been estimated that a concentrating solar facility can increase the albedo of a desert environment by 30%–56%, which could influence local temperature and precipitation patterns through changes in wind speed and evapotranspiration. Depending on their design, large concentrating solar facilities may also have the ability to produce significant amounts of unused heat that could be carried downwind into adjacent wildlife habitat with the potential to create localized drought conditions."[85] The DEIR/S clearly describes how new roads, fencing, and habitat fragmentation will all promote impacts to species including the MFTL, including where it states that, "direct impacts to MFTL during construction of the solar facility, gen-tie line, distribution line, and associated access roads would occur due to removal of habitat and accidental mortality of lizards from vehicle strikes." However, there are two reasons why the DEIR/S analysis of impacts and resultant (inadequately) described mitigation fall short for the MFTL:

26-34

1. For reasons described above, surveys of individuals not combined with a qualitative statistical estimate for occurrence are always underestimated, and

2. There is an impact phenomenon that occurs on desert development sites not addressed by the DEIR/S, detailed below.

Biologists, myself included, have witnessed an important phenomenon on solar and wind energy project construction sites in arid regions where lizard species are present, and pre-construction surveys required focused searches for animals along roads and within construction zones. Specifically, we have observed that lizards are directly and immediately attracted to roads on and around construction sites where trucks spraying water and other erosion control liquids are used to reduce airborne dust, as is the case with every desert development project when attempting to dust minimization protocols. This practice serves to **attract** lizards of a variety of species to the higher moisture levels on the roads, resulting in increased mortality and injury due to being hit by construction site traffic that use the roads subsequent to the water trucks passing. For instance, within the course of one month this phenomenon resulted in the mortality of over 20 flat-tailed horned lizards (*Phrynosoma mcallii*) (a sensitive species) (FTHL) on one solar construction site in the southern Sonoran desert during the summer of 2014, and where over an additional 100 FTHLs were relocated to avoid mortality from vehicle impacts during several weeks of the construction phase.[86] During the construction of the Sunrise Powerlink gen-tie line in the Sonoran Desert, from just April to November, 103 flat-tailed horned lizards were relocated and 25 mortalities were recorded.[87] It is key to note that these solar industrial projects failed to anticipate these significant impacts to lizards due to this phenomenon, and as a result one facility had to completely stop work for at least a week. One independent contractor reported losing an alleged $146,000 a week due to the unexpected delay, partly due to the developer's resistance to hiring the requisite number of additional biologists needed to detect and relocate lizards at risk of mortality and injury.[88]

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[85] Rosen, P. C. 2000. A monitoring study of vertebrate community ecology in the northern Sonoran desert, Arizona (Order No. 9965915). p. 98.

[86] Wilton, Ben. Tenaska, Personal communication, March 19, 2015; Hord, P. pers. comm., Aug 27, 2017.

In summary, observations during the construction phase of a solar industrial site facility construction in Southern California desert reveal that lizards of varying species and sizes appear to be opportunistically attracted to the added moisture on the roads from water trucks. Such behavior was not restricted to any lizard species in particular, however clearly the reason it is under-reported is that these development sites rarely have biologists deliberately searching Project sites and roads for lizards because the impact analyses and resultant permits typically do not require such an effort. When this phenomenon was officially noted as impacting sensitive species (i.e. the FTHL), additional on-site biologists and mitigation management practices were necessary to ensure complete coverage of all construction roadways and other areas where lizards were prone to death and injury from vehicle impacts[89]. It must be noted that mortalities from even one Project such as this could have a population level effect, considering several Distinct Population Segments have been identified in this region; the same can be said for the MFTL.[90] According to Murphy et. al., "many local populations of *U. scoparia* are quite small with some having perhaps fewer than 500 adults. Small patches of sand cannot support large populations of lizards. Thus, the species is considered rare according to geographic distribution, population size and habitat specificity." Further, as noted above, fringe-toed lizard densities are negatively affected by sand depletion and surface de-stabilization.[91] 26-34

In order to adequately mitigate for such high potential impacts to the fringe-toed lizards, the Applicant must take into consideration the risks iterated above, and require mitigation measures to reduce resultant impacts include additional biologists present onsite during all hours of construction, enhanced traffic restrictions, and a reptile relocation Plan and Monitoring Strategy during the construction phase.

iii. The DEIR/S Underestimates the Potential for Foraging Eagles and other Raptors on the Project Site 26-35

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[87] Flat-tailed Horned Lizard Interagency Coordinating Committee. (2011). Annual Progress Report: Implementation of the Flat-tailed Horned Lizard Rangewide Management Strategy, January 1, 2010 to December 31, 2010. Report prepared by the Flat-tailed Horned Lizard Interagency Coordinating Committee.

[88] Clarke, C. March 2015. Work on Solar Project Halted to Protect Lizard. KCET. Retrieved from: http://www.kcet.org/news/redefine/rewire/solar/work-on-solar-project-halted-to-protect-lizard.html

[89] P. Hord, pers. comm., Sage Wildlife Biology. Aug 27, 2017.

[90] Murphy, R., Trepanier, T., Morafka, D. Conservation genetics, evolution and distinct population segments of the Mojave fringe-toed lizard, *Uma scoparia. Journal of Arid Environments.* Volume 67, Supplement, 2006, pp 226-247. https://doi.org/10.1016/j.jaridenv.2006.09.023

[91] Kaufmann, J. S. 1982. Patterns of habitat resource utilization in a population of *Uma scoparia*, the Mojave fringe-toed lizard. M. S. Thesis, Univ. Illinois, Chicago. 78pp.

The DEIR/S states that "In March and April 2013, a total of 17 black-tailed jackrabbits were detected across the 4,855 acre Project site, equating to an estimate of approximately 0.0035 black-tailed jack rabbits/acre. A total count of cottontail rabbits was not conducted, therefore, a density estimate cannot be established for the species....Due to lack of active nests near the Project and low observed prey densities on the site (i.e., 0.0035 black-tailed jackrabbits per acre), golden eagles are expected to forage infrequently within the Alternative 1 site."[92,93] Appendix M says that these animals were detected during a 10-meter belt-transect survey of the entire Project." If 0.0035 was an actual density of jackrabbits per acre the regional population would likely be extinct by now. This survey is extremely poorly described in scope and methodology, and as such clearly cannot represent a census or any other sort of scientific estimate that is appropriate for determining abundance, site use, and/or density of jackrabbits (or cottontails) inhabiting the Project site as a primary prey item for not only golden eagles but other species as well, including red-tailed hawks and kit foxes. Therefore these data inferring prey distribution or abundance are specious and need to be re-assessed with new surveys, and cannot be used to predict that eagle or other raptors species foraging onsite would be low. Indeed, the DEIR/S also states that "A total of 26 raptor or raven nests were documented during Golden Eagle Territory Occupancy Surveys (Figure 24). Sixteen of these nests were in cliff or rock outcrop substrates, nine (9) were in power line support structures, and one was located in an ironwood tree (*Olneya tesota*). In 2013-14, species associated with raptor nests included four (4) red-tailed hawks (*Buteo jamaicensis*), two (2) prairie falcons (*Falco mexicanus*), and 12 undetermined species of raptor. The one historic golden eagle territory was occupied by a pair of red-tailed hawks during this breeding season."[94] Based upon this albeit outdated data, it can be estimated that Project use would be moderate to high for foraging by these nesting birds by default of proximity and thousands of acres of habitat for their prey species. In summary, the Project site may cause significant indirect impacts to foraging eagles and other raptor species, contrary to the assumptions made by the DEIR/S that are not supported by substantial evidence. 26-35

V. CONCLUSION

Based on the issues described in this letter, it is my professional opinion that the DEIR/S has not met the obligations of CEQA and NEPA and that the Project would result in significant and unmitigated impacts to several sensitive biological resources. The Impact analyses must be revised and resubmitted to disclose, adequately analyze, and mitigate the significant impacts. If the impacts cannot be reduced to less than significant, they are unavoidable. No further consideration should be given to the proposed Project until a DEIR/S are prepared and circulated that fully comply with CEQA and NEPA. 26-36

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[92] DEIR/S 4.4-9

[93] *Ibid.* 3.4-14

[94] *Ibid.* 4.4-9

Sincerely, 26-36

Renée Owens, M.S.
Conservation Ecologist

Professional Background 26-37

I am a conservation biologist and environmental consultant with 25 years of professional experience in wildlife ecology and natural resource management. I have managed an independent environmental consultancy since 1993, contracted for work in the U.S. and Latin America. Since 1994 have maintained U.S. Fish and Wildlife (USFWS) Recovery permits for listed species under the federal Endangered Species Act (ESA), including species discussed herein. I also hold several California state and federal certifications for surveys and monitoring of protected and special status species. I have extensive experience monitoring and studying many species across several taxa, including reptiles and amphibians, passerines and raptors, and marine and terrestrial mammals. I have served as a biological resource expert on over a hundred projects involving water, urban and rural residential developments, mines, and industrial scale energy projects; on private, public, and military lands; in California, the southwest, and Latin America. I have extensive experience observing the species and habitats located within and in proximity to the Project presented in the DEIR.

The scope of work I have conducted as an independent environmental contractor, supervisor, and full time employee has included assisting clients to evaluate and achieve environmental compliance, restoration, mitigation, and research as related to biological resources; as well as submitting written reports and comments for such work to oversight agencies. This work includes analyzing and reviewing actions pursuant to the California Environmental Quality Act, the National Environmental Policy Act, the Endangered Species Act, the Clean Water Act, the Migratory Bird Treaty Act, and other regulations, along with surveying for and preparing Biological Technical Reports and Assessments. I have been contracted as an environmental consultant by the USFWS, the US Forest Service, BLM, and at least 18 local, national and international. I am a member of the National Sierra Club's Wildlife and Endangered Species Committee and Marine Advisory Committee.

My conservation and natural history research on endangered vertebrate species in Latin America have received various awards including the National Geographic Research and Exploration Award and the National Commission for Scientific and Technological Research Award. My research has been featured on National Geographic Television and Discovery Channel documentaries, and I have served as technical consultant for wildlife documentaries filmed by National Geographic Television, Discovery Channel, BBC, and Animal Planet; in 2017 I received a Special Commendation for contributions to environmental conservation from the City of San Diego.

I have a Master's degree in Ecology; my teaching experience includes college instruction since 1991. I have been an adjunct instructor in Biology, Zoology, Botany, and Environmental Science at Palomar

Community College, San Diego State University, and Imperial Valley College. I taught field courses in Tropical Ecology in Ecuador and the Galapagos for Boston University, and was a Visiting Full Time Professor in Environmental Science and Botany at Imperial Valley College. At present I am completing a second MS degree in Environmental Studies from Green Mountain College, focusing on Environmental Education and Communication. 26-37

I have gained particular knowledge of the biological resource issues associated with the Project through my extensive work on numerous research and consulting projects throughout southern California. My comments are based upon first-hand observations, review of the environmental documents prepared for the Project, review of scientific literature pertaining to biological resources known to occur in and near the Project area, consultation with other biological resource experts, and the knowledge and experience I have acquired throughout my 25 years of working in the field of natural resources research and management.

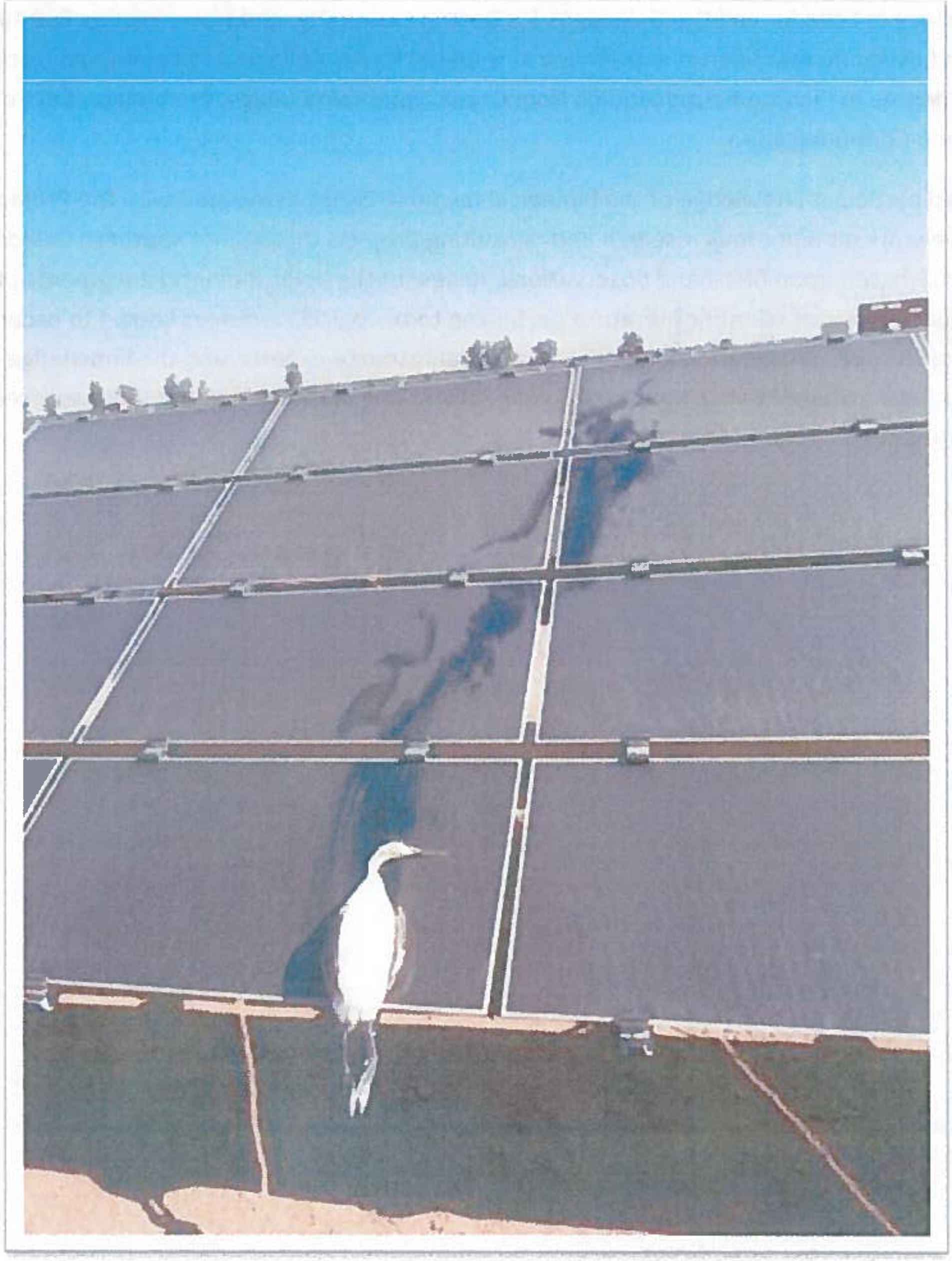

Photo 1. Western Grebe killed by collision impact to PV panels
on industrial solar site in the Sonoran Desert.

26-26
Photos

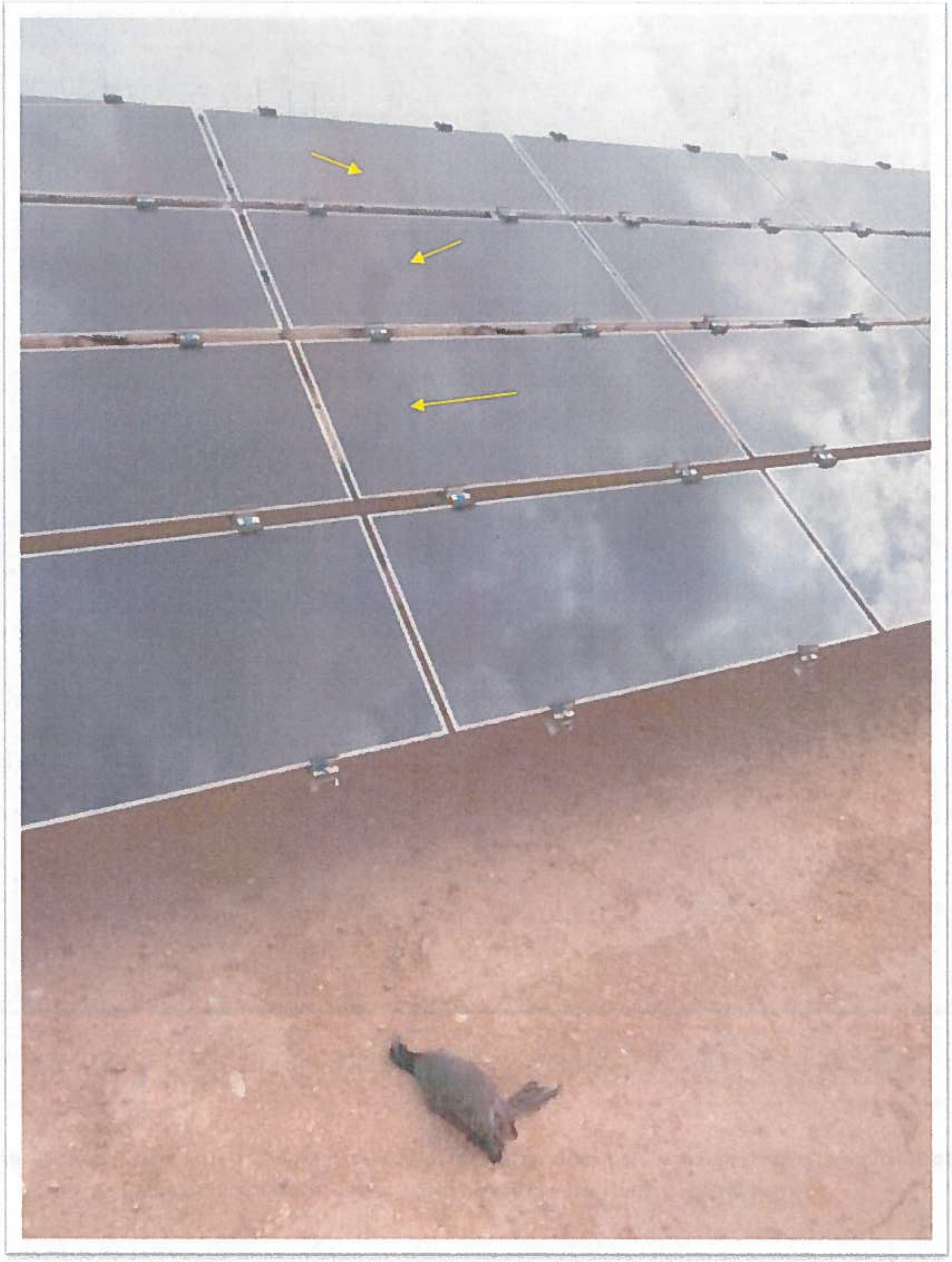

Photo 2. American coot killed by collision impact to PV panel at industrial facility in the Sonoran Desert. Note imprint in dust in solar panels indicating collision.

26-26
Photos

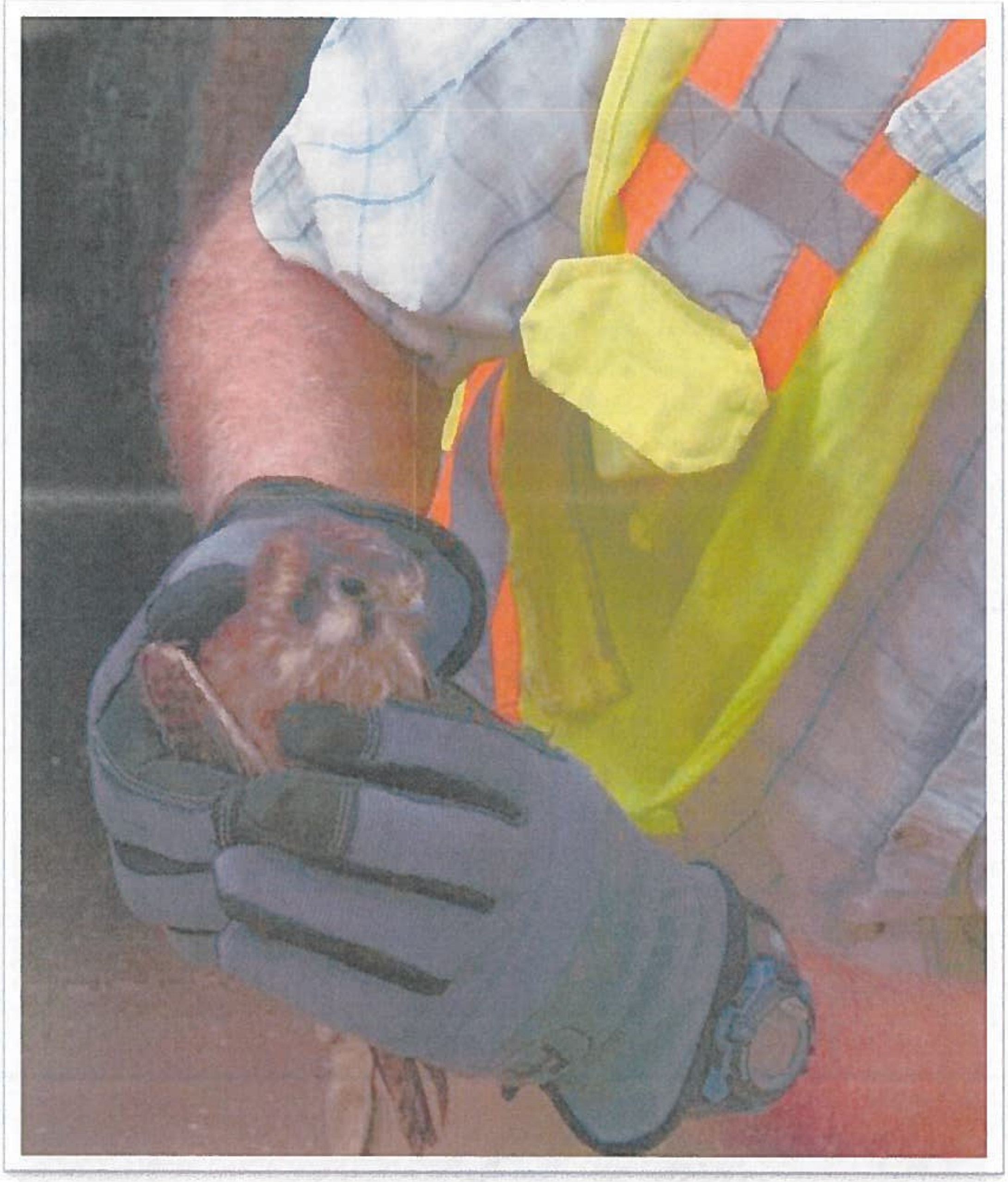

Photo 3. American kestrel injured, subsequently died, from collision with PV panels at an industrial facility in the Sonoran Desert. Kestrels often observed perching on site fencing and panels.

26-26
Photos

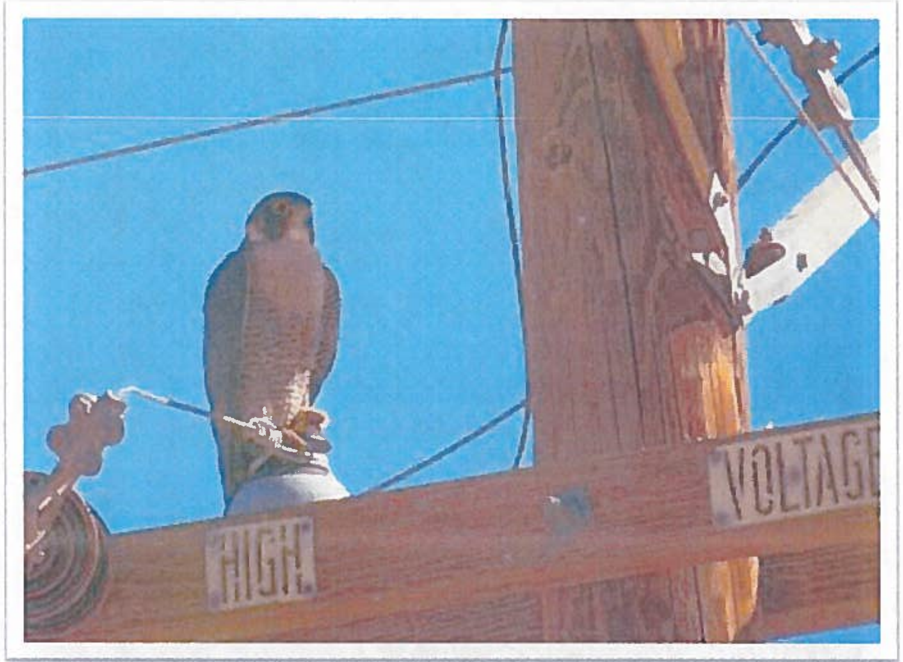

Photo 4. Peregrine falcon perched on poles servicing an industrial solar facility in the Mojave Desert.

26-26
Photos

Photo 5. Western grebe injured, later died, due to collision with PV panels in the Sonoran Desert facility.

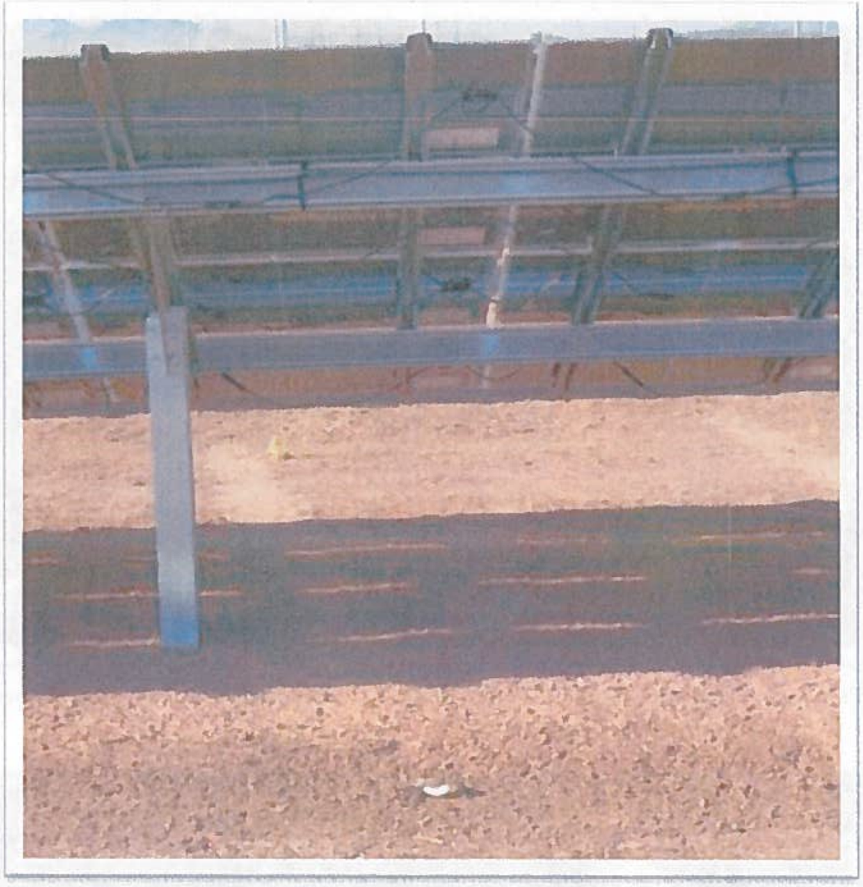

Photo 6. Sora killed by collision with PV panel in the Sonoran Desert facility.

26-26
Photos

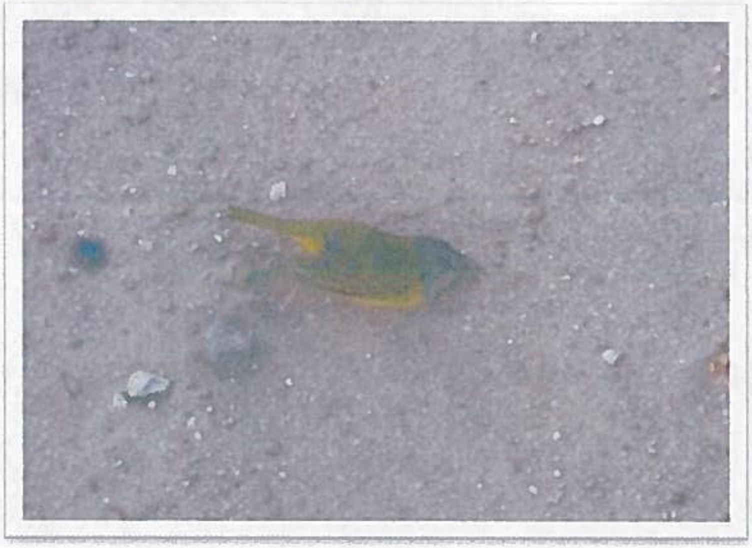

Photo 7. MacGillivray's warbler killed by collision with industrial solar facility equipment during migration at Mojave facility. Warblers like this, as well as Wilsons's warblers, appear particularly vulnerable to impacts with power lines based upon high mortality incidences personally observed.

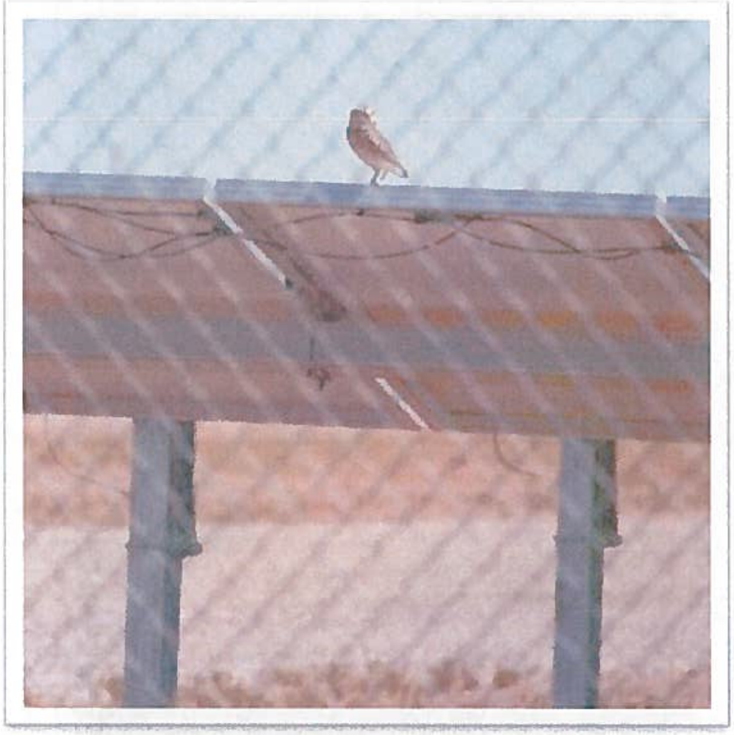

Photo 8. Burrowing owl perched on PV panels at industrial solar site where mitigation protocols included burrow exclusion and relocation. This banded owl was one of several relocated that returned to its natal site, now a solar facility.

26-26
Photos

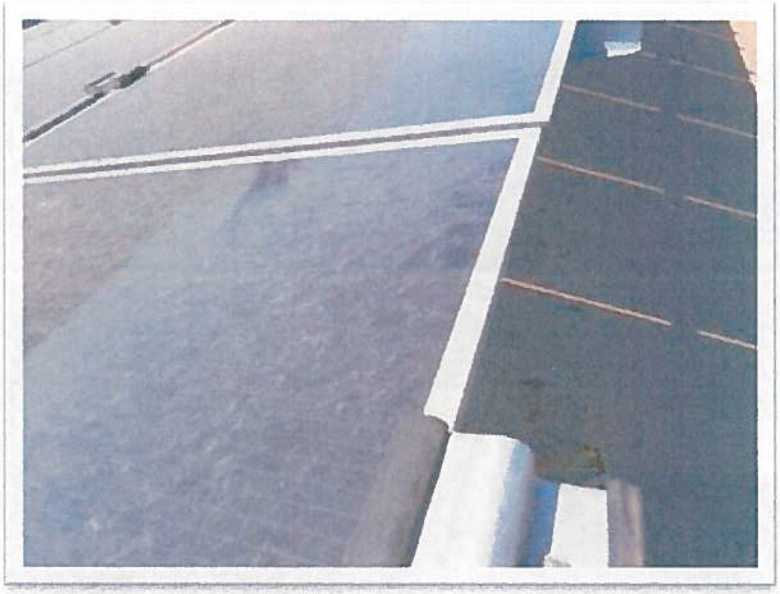

Photo 9. Strike imprint of Virginia Rail that was killed by a collision with solar panels in the Mojave Desert. Collision occurred despite the purported reduced reflectivity caused by an accumulation of dust, and presence of panels with theoretical “low reflection coating”.

26-26
Photos

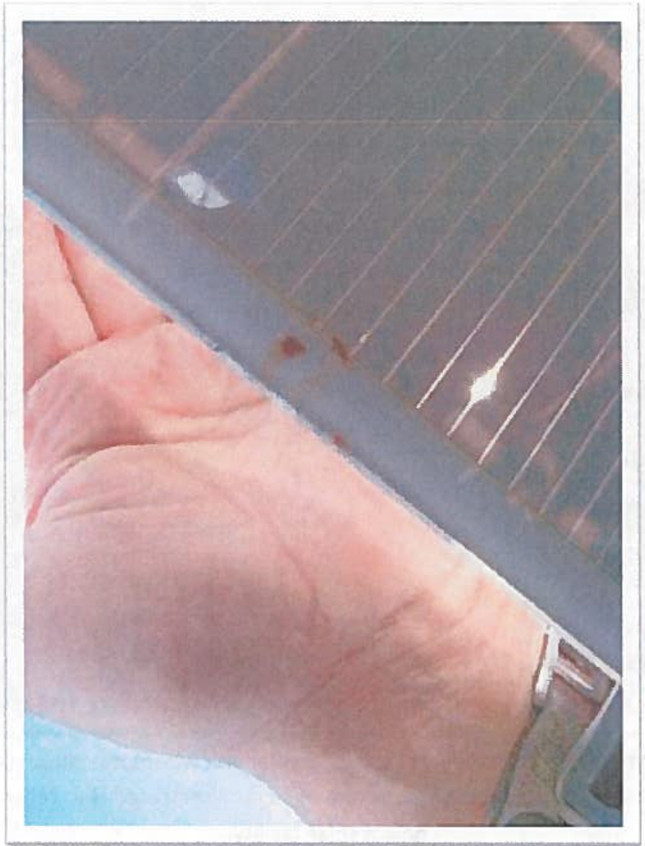

Photo 10. Forensic (blood) evidence at site of panel collision by a Sora.

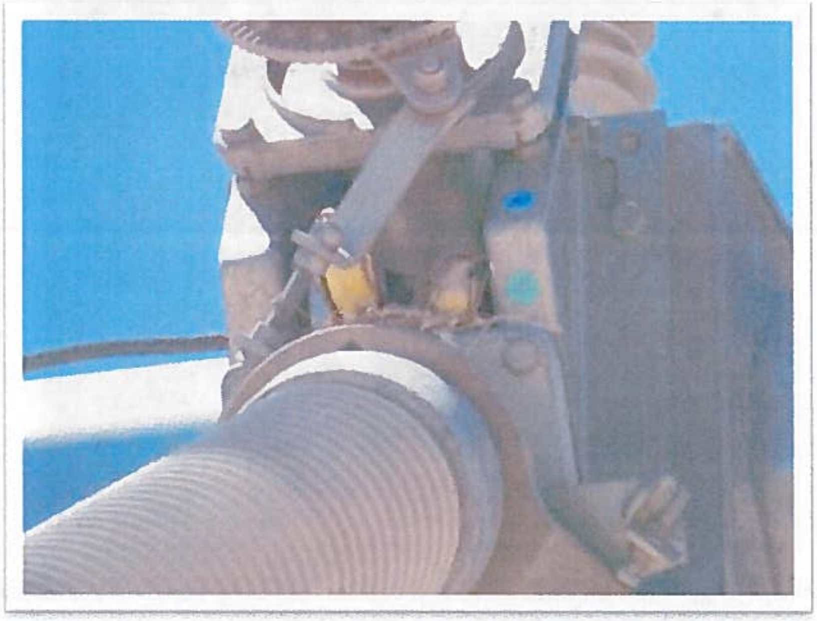

Photo 11. Kingbirds nesting on industrial solar facility in the Mojave Desert.

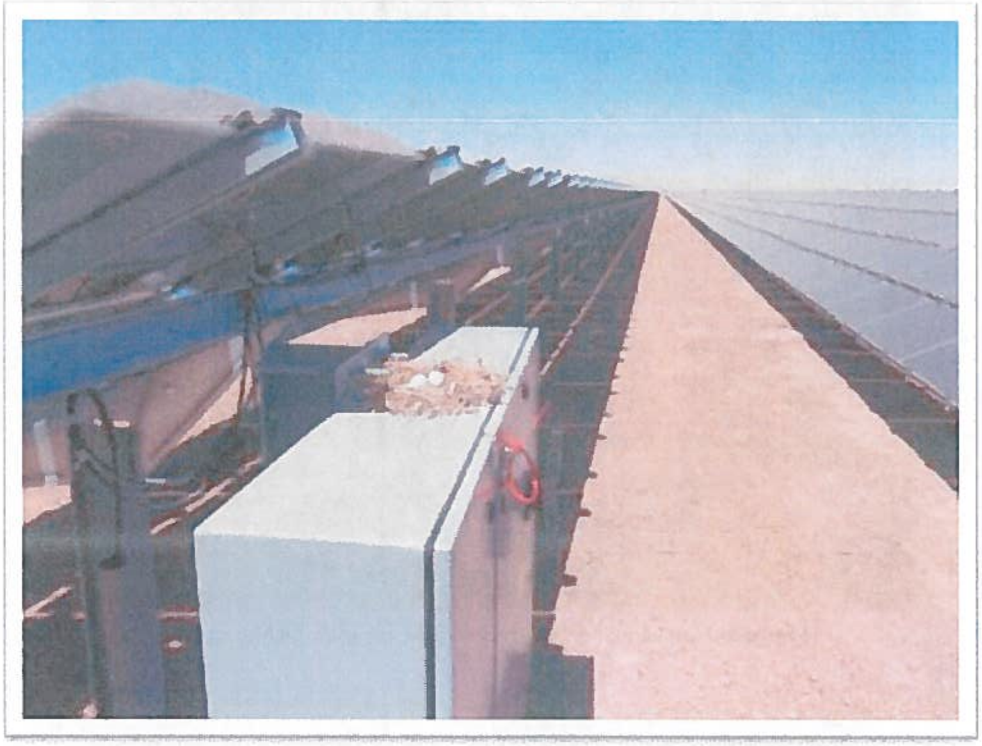

Photo 12. Mourning dove nest constructed on control box in Sonoran Desert.

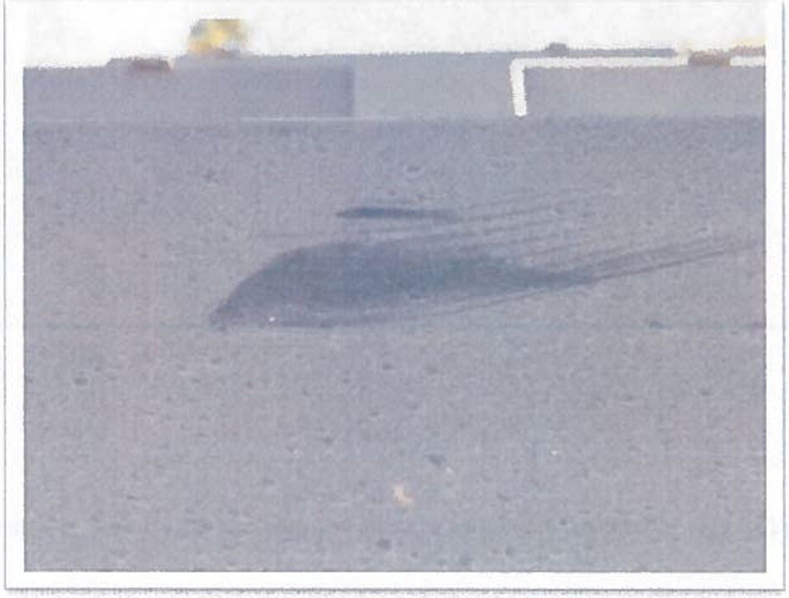

Photo 13. Strike imprint on PV panel cause by American coot (killed by collision). Strike occurred despite presence of dust build-up and "low reflectivity" of theoretical "low reflection" coating.

26-26
Photos

Photo 14. Snake killed by vehicle traffic on solar facility site

26-26
Photos

Photo 15. Lesser nighthawk incubating underneath solar panels in desert solar facility.

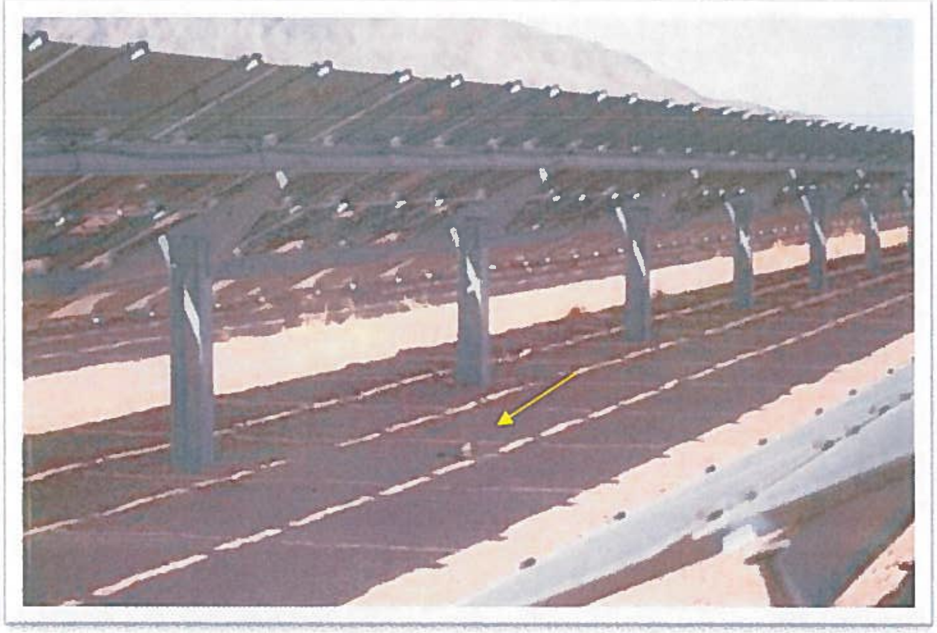

Photo 16. Lesser nighthawk incubating underneath solar panels.

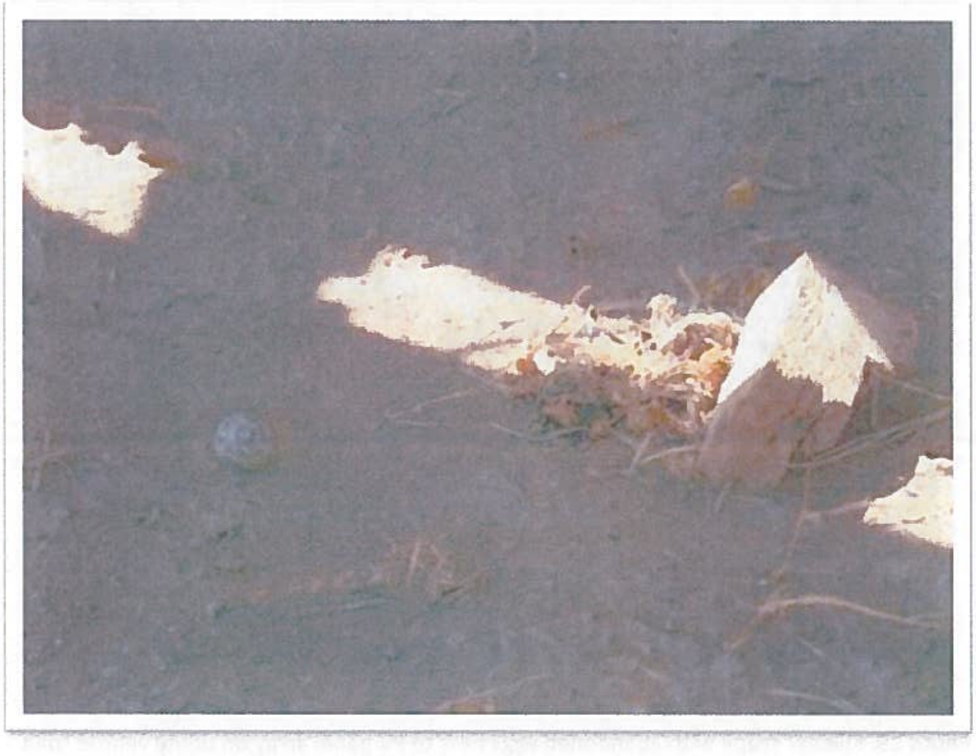

Photo 17. Lesser nighthawk egg abandoned under solar panels.
This was a common occurrence observed at solar facilities.

26-26
Photos

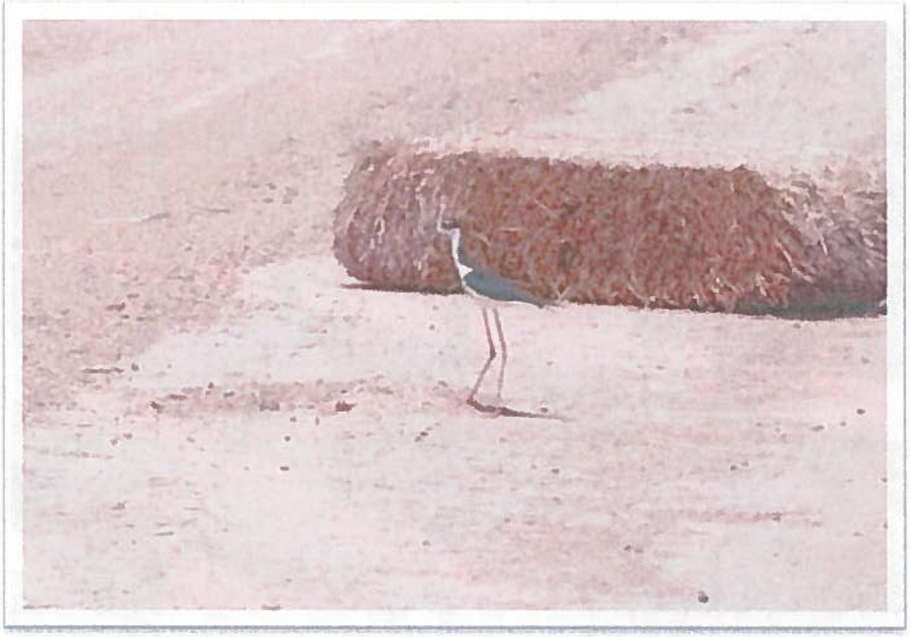

Photo 18. Black-necked stilt scrape, with eggs, alongside a road inside an active fenced solar facility.

26-26
Photos

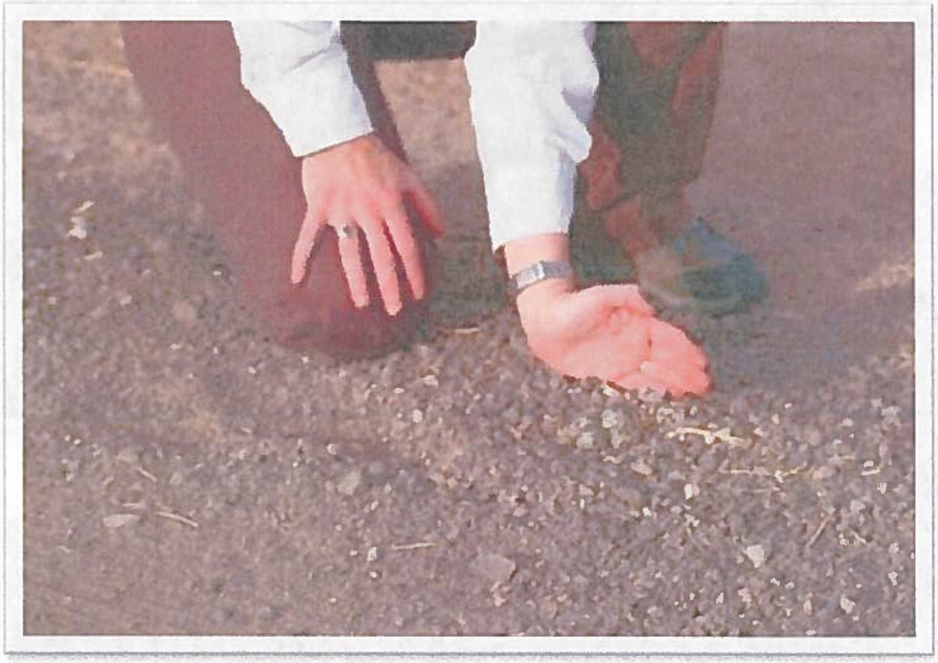

Photo 19. Killdeer scape with abandoned eggs next to PV panel array on utility vehicle road.

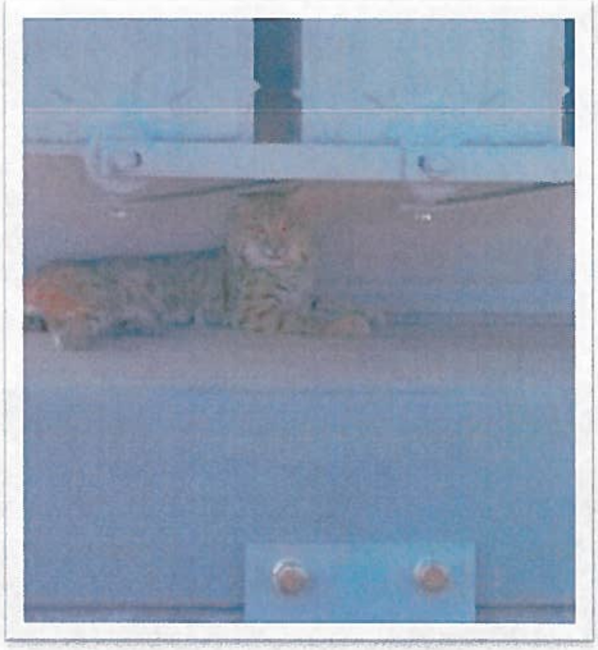

Photo 20. Bobcat in winter resting on converter located in solar facility array in the Mojave Desert. Bobcats and especiallyt coyotes are regularly observed in facilities despite exclusion fencing.

26-26
Photos

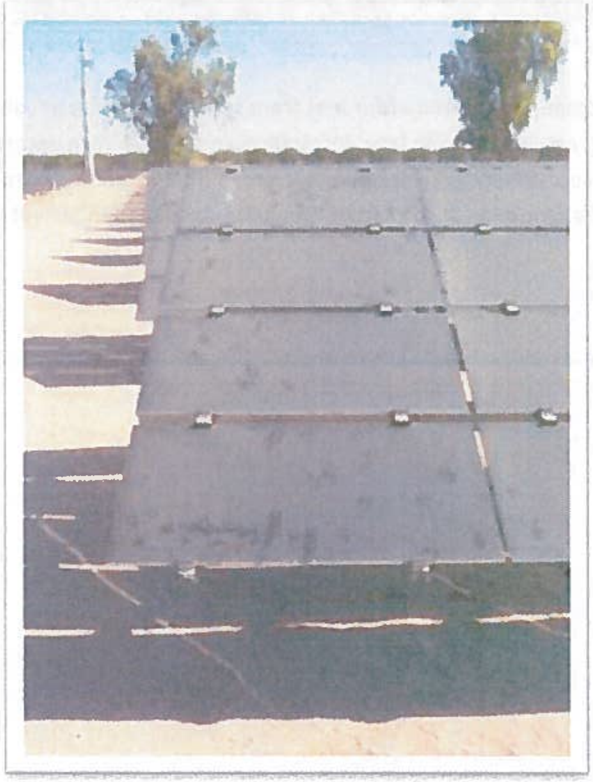

Photo 21. Mammal tracks on solar panel in Sonoran Desert solar facility array.

26-26
Photos

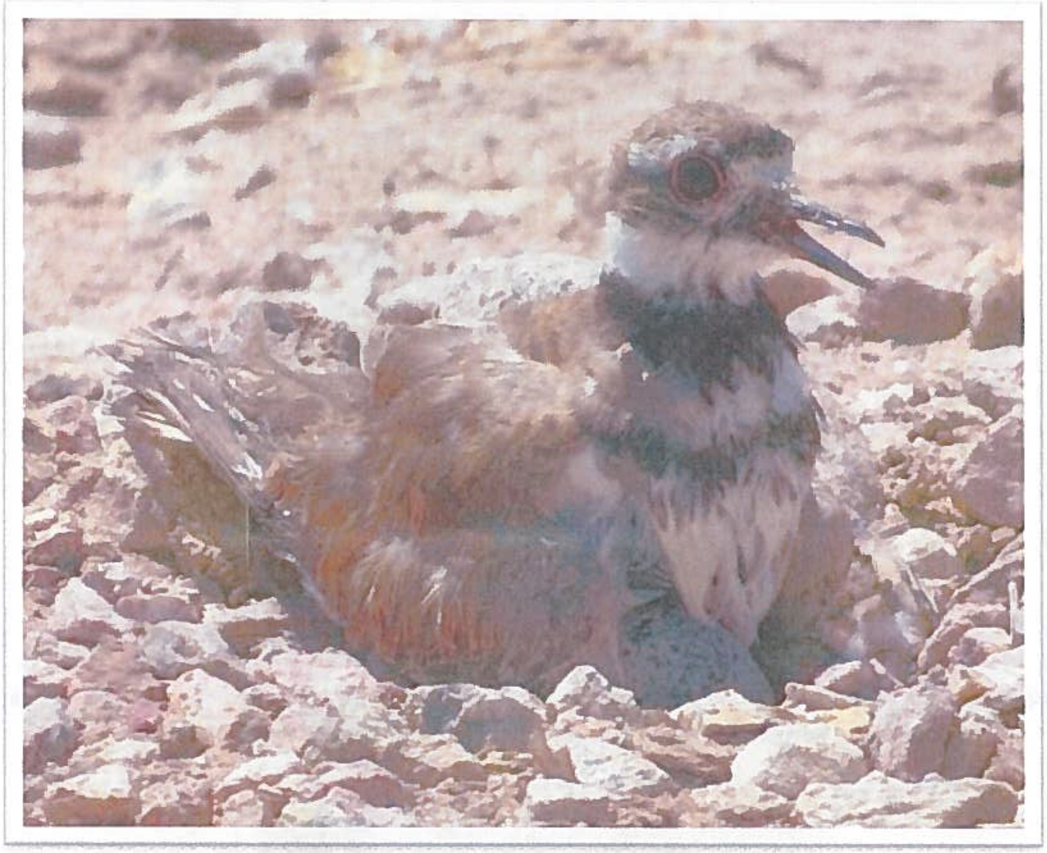

Photo 22. Killdeer on nest (scrape) on roadside four feet from solar panel array at solar facility in Imperial county. Bird is attempting to heat regulate nestling (also incubating an egg). On rare occasions during extreme heat exposure killdeer attempt to cool offspring by dribbling water from their mouths onto nestlings, as observed here. One nestling was later found abandoned at the scrape site, parents had been absent for several days. (Photo 23).

26-26
Photos

Photo 23. Killdeer nestling abandoned alongside access road inside solar industrial facility.

Photo 24. Great horned owl using nest (constructed by ravens the previous year) on solar industrial facility electrical supply tower in the Imperial Valley desert.

26-29
Table

Table 1

Avian Mortality Summary

This table provides a partial summary of avian mortalities documented at select solar facilities in desert regions of California between January 2012 and March 2016. This summary is not comprehensive for any category, it is limited to projects that have provided mortality data, and to data that were provided by the CDFW and USFWS in July 2016 in response to a Freedom of Information Act request. Blank cells indicate a lack of data provided in the report.

Doc No.	Monitoring Dates	Facility	Developer	MW / Type (PV or Solar thermal)	Location	Lead Agency	Deaths	Species
2H	4/21/2014 - 9/10/2014	Stateline Solar Project	First Solar	300 / PV	San Bernardino County	BLM	13	Rock Pigeon Orange-crowned Warbler Yellow-rumped Warbler Brewer's Blackbird Black-throated Sparrow Orange-crowned Warbler Wilson's Warbler Red-tailed Hawk California Myotis Sora Western Tanager Lesser Nighthawk
1Q	Q4 2013 10/2013 – 12/2013	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	36	Specific species not identified
1A	Q1 2014 01/2014 – 03/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	17	Mourning Dove Sora American Kestrel Snowy egret Indian peafoul American Coot Red-tailed Hawk Burrowing Owl
1O	Q2 2014 04/2014 – 06/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	10	Mourning Dove Sora Lesser Nighthawk Dove sp. Unknown
1P	Q3 2014 07/2014 – 09/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	30	Mourning Dove Sora Lesser Nighthawk Dove sp. American Coot Burrowing Owl Eurasian Collared Dove Common Ground Dove Unknown
1RA 1RB 1RC	Q4 2014 10/2014 – 12/2014	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	34	Sora American Kestrel Mourning Dove Dove sp.

								Eurasian Collared Dove American Coot White-winged Dove Savannah Sparrow Common Gallinule Rock Dove Unknown
1SA 1SB 1SC	Q1 2015 01/2015 – 03/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	24	Eurasian Collared Dove American Coot Burrowing Owl (2) Horned Lark *Icteridae* sp. Mourning Dove Cattle Egret Sora Unknown bird
1TA 1TB 1TC	Q2 2015 04/2015 – 06/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	22	Virginia Rail White-crowned Sparrow Western Meadowlark Common Gallinule Sora Eurasian Collared Dove American Coot *Parulidae* sp. Common Grackle Cliff Swallow *Trochilidae* sp. Lesser Nighthawk Pacific Loon Mourning Dove Say's Phoebe Unknown bird
1UA Missing August 1UC	Q3 2015 07/2015 – 09/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	45+ missing August data	Lesser Nighthawk Horned Lark Mourning Dove Western Grebe Eurasian Collared Dove Mexican Free-tailed Bat Sora *Columbidae* sp. Common Gallinule California Towhee
1VA 1VB 1VC	Q4 2015 10/2015 – 12/2015	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	69	Sora *Columbidae* sp. Eurasian Collared Dove Common Gallinule White-winged Dove Virginia Rail *Ardeidae* sp. American Coot Western Meadowlark Mourning Dove Black Phoebe Say's Phoebe Burrowing Owl (3)

26-29
Table

								Greater Roadrunner Mallard Vesper Sparrow Blue-footed Booby European Starling Unknown bird
1WA 1WB 1WC	Q1 2016 01/2016 – 03/2016	Campo Verde Solar	First Solar	123-139 / PV	Imperial County	Imperial County	35	Mourning Dove Sora Dove Sp. Western Meadowlark Black Phoebe Rock Pigeon American Coot Red-tailed Hawk *Emberizidae* sp. Eurasian Collared Dove White-faced Ibis Savannah Sparrow Surf Scoter Barn Owl Le Conte's thrasher
1J	Quarterly Report 07/2013 – 09/2013	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	6	
1K	Quarterly Report 01/2014 – 03/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	11	
1L	Quarterly Report 04/2014 – 06/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	5	
1M	Quarterly Report 07/2014 – 09/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	8	
1N	Quarterly Report 01/2015 – 03/2014	Topaz Solar Farm	First Solar	550 / PV	San Luis Obispo County	San Luis Obispo County	5	
1B	1st Quarterly Post-Construction Report 08/2012 – 11/2012	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	53	Short-eared Owl (2) Burrowing Owl (3) Blackbird sp. Savannah Sparrow Western Meadowlark Red-tailed Hawk Mourning Dove Fox Sparrow Common Raven

26-29
Table

									CA Horned Lark Northern Flicker Lincoln's Sparrow Long-eared Owl American Crow
1C	2nd Quarterly Post-Construction Report 11/2012 – 02/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	144	
1D	3rd Quarterly Post-Construction Report 02/2013 – 05/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	84	
1E	4th Quarterly Post-Construction Report 05/2013 – 08/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	89	
1F	5th Quarterly Post-Construction Report 08/2013 – 11/2013	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	103	
1G	6th Quarterly Post-Construction Report 11/2013 – 02/2014	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	152	
1H	7th Quarterly Post-Construction Report 02/2014 – 05/2014	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	54	

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Table

1I	8th Quarterly Post-Construction Report 05/2014 – 08/2014	California Valley Solar Ranch Project	SunPower	250 / PV	San Luis Obispo County	San Luis Obispo County	24	
1X	08/2011 – 12/2011	Desert Sunlight	NextEra	550 / PV	Riverside County	Bureau of Land Management (BLM)	8	Burrowing Owl Western Grebe Eared Grebe American Coot American Avocet Loggerhead Shrike (6) Mourning Dove Common Loon (5) Sora Wilson's Warbler Brown Pelican Common Raven Double-crested Cormorant Great-Tailed Grackle Ruddy Duck Ash-throated Flycatcher Brown-headed Cowbird Common Poorwill Horned Lark Sagebrush Sparrow Townsend's Warbler Western Tanager White Crowned Sparrow Yellow Headed Blackbird Black Headed Grosbeak Brewer's Blackbird Common Yellowthroat Costa's Hummingbird House Finch Lesser Nighthawk Pied-billed Grebe Say's Phoebe Sparrow Sp. Virginia Rail Yellow-rumped Warbler American Kestrel American White Pelican (1) Barn Owl Black-crowned Night-Heron Black-tailed Gnatcatcher Blue-winged Teal Clapper Rail Common Merganser Great Egret Lesser Scaup Long-eared Owl
1X	Q1 2012 01/2012 – 03/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	3	
1X	Q2 2012 04/2012 – 06/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	3	
1X	Q3 2012 07/2012 – 09/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	10	
1X	Q4 2012 10/2012 – 12/2012	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	10	
1X	Q1 2013 01/2013 – 03/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	3	
1X	Q2 2013 04/2013 – 06/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	20	
1X	Q3 2013 07/2013 – 09/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	25	
1X	Q4 2013 10/2013 – 12/2013	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	26	
1X	Q1 2014 01/2014 – 03/2014	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	4	
1X	Q2 2014 04/2014 – 06/2014	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	18	
1X	Q3 2014	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	15	

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Table

	07/2014 – 09/2014							Mallard Northern Mockingbird Prairie Falcon Red-breasted Merganser Redhead Red-necked Phalarope Red-winged Blackbird Savannah Sparrow Surf Scoter Tree Swallow Blackbird sp. Duck sp. Empidonax Flycatcher sp. Hummingbird sp. Jaeger sp. Verdin Western Meadowlark White-faced Ibis White-winged Dove Wilson's Snipe Yellow Warbler
1X	Q4 2014 10/2014 – 12/2014	Desert Sunlight	NextEra	550 / PV	Riverside County	BLM	10	
2A	1st Quarterly Report 08/2014 – 10/2014	Centinela Solar		170 / PV	Imperial County	Imperial County / BLM	21	American Coot Mallard Buteo Sp. American Kestrel Heron/Egret Sp. Tern Sp. Savannah Sparrow Dove Sp. Unknown bird
1Y	2nd Quarterly Report 11/2014 – 01/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / BLM	27	Burrowing Owl (5) American Coot Mourning Dove Eurasian Collared Dove White-winged Dove Rock Pigeon Dove Sp. Heron/Egret Sp. Greater Roadrunner Dove Sp.
1Z	3rd Quarterly Report 02/2015 – 04/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / BLM	13	Lesser Nighthawk Common Gallinule Mourning Dove White-winged Dove Rock Pigeon Mallard Black-crowned Night Heron Unknown
2BA 2BB 2BC	4th Quarterly Report 05/2015 – 07/2015	Centinela Solar		170 / PV	Imperial County	Imperial County / BLM	9	Brant (1) Mourning Dove *Columbidae* sp. Eurasian Collared Dove Black-crowned Night-heron American Kestrel Unknown

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Table

2CA 2CB	11/2013 - 12/2013	Imperial Solar Energy Center South	Tenaska	130 / PV	Imperial County	Imperial County	5	American Coot
2DA 2DB 2DC	01/2014 – 03/2014	Imperial Solar Energy Center South	Tenaska	130 / PV	Imperial County	Imperial County	5	Mourning Dove Cattle Egrets Sora
2EA 2EB 2EC	07/2015 – 09/2015	McCoy	NextEra	750 / PV	Riverside County	BLM	29	
2FA 2FB 2FC	10/2015 – 12/2015	McCoy	NextEra	750 / PV	Riverside County	BLM	91	
2G	01/01/16	McCoy	NextEra	750 / PV	Riverside County	BLM	10	

RENÉE OWENS

Curriculum Vitae
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- College Instruction in Biology, Botany, Environmental Science, Tropical Ecology, Zoology
- Recipient, National Geographic Research and Exploration Award
- USFWS Recovery permits for endangered Least Bell's vireo Quino checkerspot butterfly, threatened California gnatcatcher
- Environmental non-profit campaign development, volunteer coordination, training, workshop presentation, lobbying, fundraising
- Rare plant, raptor, herptile, and nesting bird surveys
- CEQA, NEPA Biological and Environmental Assessments
- Mitigation and Restoration Monitoring, HCP Planning and Implementation
- Integrated Natural Resource Management
- Small business management, website design, grant writing

For over two decades Ms. Owens has worked and volunteered as a conservation biologist, adjunct college professor, non-profit coordinator, writer, activist, and public speaker. She is founder and co-owner of Sage Wildlife Biology, specializing in wildlife research, education, and environmental compliance, established in 1993. She is certified in community college instruction, and her extensive research experience includes study in California and Latin America.

Her college instruction includes courses in Biology, Tropical Ecology, Zoology, Botany, and Environmental Science for San Diego State University, Palomar College, Boston University, and Imperial Valley College. Her research in Venezuela has been featured by National Geographic (*Crocodiles of the Orinoco, Land of the Anaconda*), Discovery, BBC, Dateline NBC, and Sierra magazine.

Sage Wildlife Biology consultancy provides services for a broad spectrum of projects that include one or more of the following: Ethology, ecological and conservation research, restoration and mitigation management, biological assessments, Habitat Conservation Plan development and implementation; surveys, mapping, and reporting of rare, threatened, sensitive, and endangered species.

Projects incorporate research and regulatory compliance from the local to federal level. Clients have included private, public, and government entities; she is an Approved Biologist for San Diego County, USDA, USFWS, DOI, and BLM.

Her research and work projects encompass many species and habitats in North and South America, including passerines, raptors, shorebirds, herptiles, cetaceans, pinnipeds, and carnivores. She leads annual workshops on CEQA and NEPA review as it relates to biological resources and public comment, and on endangered species identification and conservation. Regardless of the species or habitat involved, Ms. Owens always strives to apply the tenants of successful and humane conservation to all projects.

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EDUCATION

Community College Instructor Certification, University of California San Diego, La Jolla, CA

Advanced Coursework in Statistics, Ecology Seminars, University of Tennessee, Knoxville, TN

MS Ecology (ABD), San Diego State University, San Diego, CA

BS Biology, State University of New York at Geneseo, Geneseo, NY

WORK EXPERIENCE

Adjunct Professor, Department of Math, Science, and Engineering, Imperial Valley College, Imperial, CA. Instructor in Environmental Science, Biology. 2012 – present.

Owner, Sage Wildlife Biology LLC. Environmental compliance, research, and education in California and South America. 1993 – present.

Representative Projects:

Marine mammal research, San Diego county (2013 – present). Conducting natural history breeding season research and impact analysis of human interaction on Harbor seal rookery in La Jolla, CA.

Biologist, Los Angeles Regional Interoperable Communications System (2013). Conducted habitat assessments, sensitive species surveys, sensitive plant surveys, co-authored Biological Assessment for PEIR/ PIES, 218 site project including coastal regions to mountains to deserts. County-wide project was federally funded to create broadband wireless network using Long-Term Evolution (LTE) technology while minimizing impacts to native habitats and ecosystems. Management recommendations and design included maximizing use of existing man-made structures for project implementation while avoiding sites near riparian areas and watersheds.

Habitat Conservation Planning and Development, City and County of San Diego (2006 - 2013). Federally permitted surveys for California gnatcatcher, Quino checkerspot butterfly, Least Bell's vireo; Migratory Bird Treaty Act nesting bird surveys, herptile surveys, population assessments, and concurrent development of endangered species critical habitat components of Habitat Conservation Plans including the San Diego Multiple Species Conservation Plan and Multiple Habitat Conservation Plans. 26-38

MHCP Restoration, City of San Diego Black Mountain Open Space, CA (2011). Principal biologist for biological assessments and mitigation design and monitoring on behalf of the Black Mountain Open Space Park development project; supervised biological components of mitigation management, including coordination with the City of San Diego to implement restoration efforts within the MHCP.

Wildfire Prevention and Brush Management, California Fire Safe Council and USDA Forest Service, San Diego County, CA (2009-2011). Principal investigator responsible for brush management projects for the Alpine and California Fire Safe Council in areas adjacent to U.S. Forest Service land. Included habitat mapping, sensitive plant and bird surveys, GPS mapping, monitoring and management of vegetation reduction and invasive species management teams (consisting of two to thirty individuals), and preparation of the Biological Evaluations for the Bureau of Land Management. Project development included consultation and coordination with private landowners, scientists, Home Owners Associations, other stakeholders, and Forest Service and BLM staff.

Biologist, Pattern Energy Ocotillo Express Wind Project, BLM land, Imperial County, CA (2010-2011). Conducted daily and weekly surveys for a Environmental Assessment (EA) incorporating extensive focused wildlife surveys throughout 15,000 acres of Bureau of Land Management land in Imperial County. Involved preparation of the a EA with recommendations for avoidance of impacts to sensitive habitats and species including golden eagles, Peninsular bighorn sheep, burrowing owls, and flat-tailed horned lizards.

Perpetual Land Management Plan, San Elijo and Greenland Reserves, San Diego County (2005 – present). Principal biologist reporting on the status of two habitat preserve Habitat Conservation Plans on behalf of The Escondido Creek Land Conservancy. The areas combined incorporate 110 acres of riparian wetland, oak woodland, coastal sage scrub, and chaparral habitats; created in compliance with California Environmental Quality Act (CEQA) and Multiple Habitat Conservation Plan (MHCP) planning. Third party beneficiaries of these preserves are the USFWS and California Department of Fish and Wildlife. Project duties include habitat mapping, surveying and reporting of sensitive, threatened, and endangered plant and animal species as well as habitat suitability analysis, invasive floral species monitoring and removal, and recommendations for riparian corridor restoration.

California Wild Heritage Campaign, Wilderness Society (2002 -2003). Duties as a biologist and campaign organizer included biological surveys and mapping of proposed wilderness areas, coordination of volunteers, lobbying of Congressional politicians, organizing of tabling events, educational materials, and outreach campaigns.

Endangered Species Conservation and Natural History Research (1996-2002). Funded by the National Geographic Research Foundation, Wildlife Conservation Society (WCS), The Venezuelan National Council for Scientific and Technological Research (CONICIT), and Venezuela's federal wildlife agency (Profauna); co-researcher in a unique eight year study of the natural history of the green anaconda. Research incorporated radio telemetry, mark and recapture, genetic analysis, and mating system study; findings were used to develop a sustainable conservation program for 175,000 acres of flooded savanna and forest in Apure, Venezuela. Provided eco-tourism and wetland restoration management recommendations for other regions with similar habitats. Included habitat suitability analysis, population assessments and nest monitoring, and reintroduction of endangered species (Orinoco crocodile, Arau turtle, and the Red-footed tortoise); as well as natural history study of the endangered giant otter previously considered regionally extinct. Ms. Owens also generated a resident bird list for a 150,000 acre preserve comprised of over 400 species including one previously undocumented species for the region.

Threatened Species Monitoring and Critical Habitat Assessment, (USFWS) Camp Pendleton Marine Base, (1994-1995). Principal biologist, participated in a long term monitoring effort of the California gnatcatcher for Camp Pendleton Marine Base in Oceanside, CA. The study incorporated monitoring of the species during breeding and non-breeding seasons; included data collection for over 40 active breeding pairs spanning an area of several thousand acres. Data was used to generate reports on habitat suitability as related to nesting success, contributed to critical habitat assessments and recovery planning. 26-38

Least Bell's Vireo Endangered Species Recovery Plan (USFWS) (1991-1995). Conducted 5 years of breeding season nest monitoring surveys and invasive species management as part of the USFWS Endangered Species Recovery Plan for the Least Bell's Vireo; duties included monitoring, banding, and reporting annually on 25 to 70 nesting pairs throughout San Diego County while providing habitat assessments and reports for Critical Habitat evaluation and population recovery analysis.

Campaign Director, Wildlife Conservationist Certification Training Program. 2009-2011. Conservation grant from the San Diego Foundation, collaborating with San Diego Audubon, funded the development and implementation of a program designed to solicit, educate, and train adult volunteers for a long term commitment to volunteer activism and naturalist interpretive programs. Certification included class instruction, field trips, and 30 hour commitment to an environmental campaign.

Visiting Assistant Professor, Department of Math, Science, and Engineering, Imperial Valley College, Imperial, CA. Lecture and laboratory instruction in Environmental Science and Botany. 2008.

Adjunct Professor and Research Fellow, Boston University Tropical Ecology Program, Cumbaya, Ecuador. Included lecture and intensive field study of tropical habitats including cloud and mangrove forest, Pacific intertidal zones, rainforest, Galapagos Islands, and Paramo. 1999 –2000.

Campaign Director and Biologist, World Society for the Protection of Animals, Boston, MA. Responsible for research, project development, and reporting for wildlife related campaigns in Latin America. Included travel to various Central American to lead training workshops, implement campaigns for species in biodiversity hotspots including key watersheds, coral reef, Pacific coastal rainforest, among other habitats; and oversight of emergency disaster relief that incorporated basic veterinary care instruction, organizational and material support, livestock vaccinations, as well as support for wildlife and companion animals. 1998-1999.

Wildlife Biologist, HELIX Environmental Planning Inc. (formerly Sweetwater Biological). Biologist responsible for ornithological and herptile surveys and monitoring; mitigation and restoration monitoring, reporting, and management; and contributions to Habitat Conservation Plans for private and government entities. 1996, 2000-2001.

Adjunct Professor, Palomar Community College, San Marcos, CA. Instruction in General Biology for majors, non-majors. 1994 - 1996.

Laboratory Assistant, Toxicology and Physiology Departments, University of Rochester Medical Center, Rochester, NY. Duties included research in environmental toxicology, Muscular Sclerosis, Parkinson's disease. 1987 – 1989.

Wildlife Conservation Intern, Mumford Wildlife Research Station and Preserve, Mumford, NY. Conducted research on breeding success of nesting Eastern Bluebirds and parasitism of breeding passerines; included monitoring and mapping of 250 nest boxes and species use, also conducted surveys with Preserve visitors regarding public interest for wildlife and conservation. 1987.

VOLUNTEER EXPERIENCE

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National Sierra Club, Wildlife and Endangered Species Committee, Marine Action Committee. 2010 – present.

San Diego Audubon Society Conservation Committee, 2009 – 2014.

San Diego Sierra Club (SDSC) Executive Committee, 2008 – 2010.

SDSC Conservation Committee Chair, 2007 – 2010.

SDSC Wildlife Committee Chair, Forest and Wilderness Committee, Political Committee, 1994-1996, 2000 – 2008.

Wildlife Research Institute Scientific Advisory Committee, 2006 – 2008.

Lakeside Emergency Wildlife Rehabilitation Center, 2000 – 2005.

AWARDS / HONORS

- San Diego Foundation Vision Fund Environmental Education and Conservation Grant 2010
- Photo, "TIME Great Images of the 20th Century", TIME Magazine Publications 2000
- CONICIT Award for the Novel Researcher 1998
- CITES and Profauna Joint Research Grant 1996
- National Geographic Film and Research Grant 1996
- National Geographic Research and Exploration Award 1996
- Wildlife Conservation Society Research Grant 1996
- Sierra Club Emily Durbin Leadership in Conservation Award 1995
- SDSU Harry Hamber Academic Graduate Scholarship 1991
- U.S. National Triathlon Championships 1989

- New York State Regents Academic Scholarship 1983

CERTIFICATIONS and WORKSHOPS

- U.S. Fish and Wildlife Recovery Permit for the Coastal California gnatcatcher, Least Bell's Vireo, Quino checkerspot butterfly.
- Acoustic Monitoring of Bats, Field Techniques Workshop, Wildlife Society, 2012
- Desert Tortoise Council, Survey Techniques Workshop, Certificate of Completion November 2010
- Flat-tailed Horned Lizard BLM Survey Techniques Workshop, Certificate of Completion, 2010
- Desert Tortoise Council, Survey Techniques Workshop, Certificate of Completion, 2006
- USFWS Arroyo Toad Workshop, Certificate of Completion , Camp Pendleton Marine Base, 1999
- Willow Flycatcher Workshop, SD Natural History Museum, Certificate of Completion, 1995

PROFESSIONAL AFFILIATIONS

- Association of Field Ornithologists
- Citizen Science League
- Marine Mammal Society
- National Association of Biology Teachers
- Society for Conservation Biology
- Society for the Study of Amphibians and Reptiles
- Wildlife Society

INTERNATIONAL SOCIETY CONFERENCE PRESENTATIONS

- "Conservation of the Green Anaconda in Venezuela", Annual Conference of the Society for the Study of Ichthyology and Herpetology, La Paz, Baja California, Mexico, 2000.
- "Trends in the International Reptile Pet Trade", Annual Conference for the Humane Society International, Boston, MA, 1998.
- "Navigation and Orientation of Long Distance Migrants: How Bobolinks use Stellar and Magnetic Cues for Migration", Annual Conference for the Society of Behavioral Ecology, Albany, NY, 1987.

Select PUBLICATIONS and ARTICLES

- Rivas, J.A. and Owens, R.Y. 1999. Teaching conservation effectively: a lesson from life history strategies. *Conservation Biology*, 13 (2): 453-454.
- Owens, Renee Y. In prep. (*Conservation Biology*.) Economic and social costs of "joint use" policy management of a Harbor seal rookery in a developed coastal zone of California.
- Owens, Renee Y. In revision. *Journal of Field Ornithology.* Nesting associations between wasps of the genus *Polybia* and passerine birds of the Venezuelan Llanos.

- Owens, Renee Y. 2014. The USDA's Dirty Secret: A Century-Old Wildlife Killing Machine, *The EcoReport* (January). Retrieved from http://www.theecoreport.com/green-blogs/sustainability/conservation/wildzone/the-usdas-dirty-secret-a-century-old-wildlife-killing-machine/
- Owens, Renee Y. 2013. Be Afraid, Be Very Afraid! *The EcoReport* (February). Retrieved from http://www.theecoreport.com/green-blogs/sustainability/conservation/wildlife/be-afraid-be-very-afraid/
- Owens, Renee Y. 2012. Rebirth of Green: Resolution for 2013. *San Diego Loves Green: The Wild Zone* (December). Retrieved from http://www.sandiegolovesgreen.com/the-re-birth-of-green-resolution-for-2013.
- Owens, Renee Y. 2012. Coyotes: The Media's Modern Bogeyman. *San Diego Loves Green*: *The Wild Zone* (December). Retrieved from: http://www.sandiegolovesgreen.com/coyotes-the-medias-modern-bogeyman-2/
- Rivas, J.A. and Owens, Renee Y. 2002. Orinoco crocodile (*Crocodylus intermedius*): Age at First Reproduction. *Herpetological Review*. 33 (3): 203.
- Rivas, J. A., R. Y. Owens, and S. A. Aktay, 2001. *Paleosuchus trigonatus* (Schneider's Smooth fronted Caiman): Nesting and hatching. *Herpetological Review*. 32: 251.
- Rivas, J. A., Owens R. Y. and Calle, P.P. 2001. *Eunectes murinus*: Juvenile predation. *Herpetological Review*. 32 (2): 107-108.
- Rivas, J. A. and R. Y. Owens. 2000. *Eunectes murinus* (green anaconda): cannibalism. *Herpetological Review*. 31(1):44-45
- Rivas, J. A., Thorbjarnarson, J. B., Owens, R. Y and M. C, Muñoz, 1999. *Eunectes murinus*: caiman predation. *Herpetological Review*. 30 (2): 101
- Owens, R.Y. 1997. Informe técnico al Servicio de Fauna de Venezuela (Profauna): Regional population assessment of the endangered giant otter (*Pteronura brasiliensis*) in Apure State, Venezuela.
- Unpublished Master's Thesis, "Bioacoustics of the Commerson's Dolphin (*Cephalorhynchus commersonii*) with Recommendations for Applied Conservation" 1994.

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REFERENCES

Patrick L. Hord, conservation biologist, non-profit manager 858-220-4732 chatamour7@yahoo.com

Jill Fritz, Michigan Director, Humane Society of the U.S. 517-515-3839 jfritz@humanesociety.org

Jane Higginson, retired college instructor, environmental consultant 619-219-9311 archelonia@cox.net

On behalf of Citizens for Responsible Solar, the law firm of Adams, Broadwell, Joseph & Cardozo (ABJC) submitted comments on the Draft Plan Amendment/ Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) for the Desert Quartzite Solar Project, including comments from technical consultants, on February 7, 2019 and March 11, 2019. These submissions were outside the public comment period that expired on November 8, 2018 and already significantly exceeded the public participation requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Neither Riverside County nor the Bureau of Land Management (BLM) is, respectively, required to respond in writing to these late filed comments. Because CEQA empowers petitioners to challenge an EIR in court on any grounds raised prior to its certification, the County has elected to respond, as it sees fit, to certain comments to further the informational purposes served by CEQA. In doing so, however, the County is not waiving its discretion to forgo written responses to late-filed comments.

The separate comment letters from SWAPE and Renee Owens, also submitted months after the comment deadline, are largely duplicative of the comments made by ABJC. The SWAPE comments in particular are summarized entirely and in detail in the ABJC comment letter. Like the ABJC letter, these late filed comments do not require written responses. The County has nevertheless responded to these comments as well as ABJC's.

Substantively, AJBC's February 7, 2019 letter claims that the Draft EIS/EIR "(1) fails to set forth a stable and finite project description, (2) fails to set forth the environmental baseline for water and resources, and (3) fails to identify, analyze and mitigate to the extent feasible, all the impacts that the Project will have on, public health, and air quality." AJBC's March 11, 2019 letter claims that the Draft EIS/EIR "(1) fails to set forth the environmental baseline for biological resources, and (2) fails to identify, analyze and mitigate to the extent feasible, all the impacts that the Project will have on biological resources." Although the County and BLM have, as explained in more detail below, made some changes in the final EIS/EIR that clarify or amplify the analysis related to some of the issues raised by AJBC and its consultants, AJBC has not identified any issues that require supplementation of the EIS/EIR and recirculation.

25-1 The commenter describes the nature of the Project and the Project location. The commenter's understanding of the Project, including the proposed facilities and intended power output, is consistent with the description provided in Draft PA/EIS/EIR Chapter 2, Proposed Action and Alternatives (Draft PA/EIS/EIR page 2-1 et seq.). No further response is necessary.

25-2 The past and reasonably foreseeable projects identified in this comment are listed and summarized in Draft PA/EIS/EIR Tables 4.1-1, 4.1-2, and 4.1-3, and their incremental impacts have been taken into consideration as part of the cumulative effects analysis. The incremental impacts of these past, present, and reasonably foreseeable future projects (in combination with those of the Project) are analyzed on a resource-by-resource basis throughout Draft PA/EIS/EIR Chapter 4 to determine whether a significant cumulative effect would result. The comment does not identify any error or oversight in this regard.

The commenter presumes without demonstrating that the governmental agencies serving as CEQA or NEPA lead agencies, or that may have other mitigation responsibility over projects in the cumulative scenario, have exercised their authority improperly or inadequately, resulting in mitigation measures that are lacking. The County disagrees. Regardless, those other agencies' actions in the contexts of other projects do not bear on the adequacy or accuracy of the cumulative effects analysis of this Project. The commenter's conclusory statements unsupported by references to scientific authorities, empirical data, explanatory information, or other evidence are insufficiently specific to allow for a more detailed response. Cumulative effects to biological resources, including mammals and avian species, are analyzed in Draft PA/EIS/EIR Section 4.4.6; cumulative effects to water resources are analyzed in Draft PA/EIS/EIR Section 4.20.6. Impacts to agriculture are evaluated in Draft PA/EIS/EIR Section 4.10.4. The comment does not question the adequacy or accuracy of these analyses, the methodology employed or data relied upon in conducting them, or their conclusions.

The commenter correctly notes that CEQA requires an adequate analysis of direct, indirect, and cumulative impacts and the imposition of mitigation measures (or consideration of alternatives) that would reduce potential significant impacts below established thresholds. The Draft PA/EIS/EIR concludes that the Project would result in a less than significant impact associated with the potential to substantially interfere with migratory wildlife corridors because the Project site is not located within a known wildlife migration corridor or linkage connecting large open space areas; the immediate Project area and surrounding region contains large expanses of open habitat that provide ample amounts of area for local and regional wildlife movement. The comment suggests that the mitigation measures described in the Draft PA/EIS/EIR will not be as effective as claimed; however, the comment provides no data, facts, or expert opinion based on data or facts to support this claim. An unsubstantiated opinion does not constitute substantial evidence and provides no basis to enable the County to provide a substantive response to the concern.

The commenter suggests that the Draft PA/EIS/EIR should be revised and recirculated to resolve perceived inadequacies. Generally, an EIR must be recirculated for additional public review only if "significant new information" is added to the EIR following notice of the initial public review period but prior to final certification (CEQA Guidelines Section 15088.5(a)). Not all new information added to an EIR is significant, and "new information added to the EIR that merely clarifies or amplifies or makes insignificant modifications" does not trigger recirculation (CEQA Guidelines Section 15088.5(b)).

Section 15088.5(a) of the CEQA Guidelines states:

A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the Project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project or a feasible way to mitigate or avoid such an effect (including a feasible Project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation includes, for example, a disclosure showing that:

(1) A new significant environmental impact would result from the Project or from a new mitigation measure proposed to be implemented.

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible Project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the Project, but the Project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

The fourth example is based on the court's decision in a specific lawsuit and is intended to capture circumstances in which fundamental information is omitted in the Draft EIR and then added after the public comment period has closed. In *Mountain Lion Coalition v. Fish & Game Commission* (1989) 214 Cal. App. 3d 1043, an environmental organization challenged the Fish and Game Commission's adoption of regulations that would have allowed sport hunting of mountain lions to resume within the state based on an environmental analysis that failed to adequately consider cumulative impacts: the analysis inadequately addressed or completely ignored important environmental issues that had been drawn to the agency's attention by the superior court, ignored input from scientists, and failed to support conclusions with references to specific scientific and empirical evidence. In reaching its decision, the court stated: "While technical perfection in a cumulative impact analysis is not required, courts have looked for 'adequacy, completeness, and a good faith effort at full disclosure.' A good faith effort to comply with a statute resulting in the production of information is not the same, however, as an absolute failure to comply resulting in the omission of relevant information." *Id.* at 1052 (citation omitted).

The Desert Quartzite Solar Project Draft PA/EIS/EIR was circulated to responsible agencies, trustee agencies with resources that would be affected by the Project, and interested agencies and individuals. Per CEQA Guidelines Section 15125, baseline conditions for each topical resource area, adequate and complete disclosure of direct, indirect, and cumulative impacts, and mitigation measures, where appropriate, to avoid, minimize, and compensate adverse impacts associated with the proposed Project are described in Chapter 3, Affected Environment, Sections 3.1 through 3.21. The significant unavoidable, irreversible, and irretrievable commitments of resources, short-term uses, and long-term productivity and growth-inducing impacts are analyzed in Chapter 5, Other NEPA and CEQA Considerations.

As discussed in this Final PA/EIS/EIR, no "significant new information" has been added to the Draft PA/EIS/EIR and neither a new significant environmental impact nor a substantial increase in the severity of an existing significant environmental impact has been identified.

Finally, no new feasible alternative or mitigation measure that clearly would lessen the environmental impact(s) of the Project has been identified that the Applicant has declined to adopt. The Draft PA/EIS/EIR is in compliance with applicable CEQA Guidelines and other requirements. Revisions to the Draft PA/EIS/EIR were made in response to public comments, but recirculation is not required.

25-3 Regarding the suggestion that recirculation is needed, see Response 25-2. General assertions that the Draft EIR contains an inconsistent Project Description; fails to establish an environmental baseline; and fails to identify, analyze, and mitigate to all significant impacts that the Project would have on public health and air quality are addressed briefly here and in more detail below where each suggestion is described sufficiently to allow a detailed response.

The Commenter's statement that the Project description is deficient is inaccurate. The Project description provided in Chapter 2, Proposed Action and Alternatives, is accurate, stable, and finite. Integral Project facilities are described in Draft PA/EIS/EIR Section 2.3.3, Facilities. It is atypical for detailed final Project design features to be well-established for energy infrastructure projects prior to certification of an EIR. The Draft PA/EIS/EIR conservatively evaluated all potential impacts of the proposed Project for each environmental factor. CEQA, by design, is initiated during the very early planning phases of a Project; therefore, a Project development plan may change due to facets that are either not anticipated or not foreseen until the time the Project is under full and deliberate development. New information or changes in the Project scope and/or design frequently occur during Project refinement and development. These differences or changes of the scope and parameters of the Project development plan by the proponent frequently do not render further scrutiny under CEQA. CEQA requires a general description of the "main features" of the Project, and does not require "all of the details or particulars." *Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal. App.4th 20, 26. A project description is adequate if it provides information sufficient to inform the public and the decision-makers of the full scope of the project.

As described in Response 25-2, the Draft PA/EIS/EIR sets forth an accurate and complete environmental baseline and analyses of the required CEQA topical issue areas. In addition, the Draft PA/EIS/EIR supplies the public and decision makers with adequate information concerning the potential environmental effects of the proposed Project and describes as necessary feasible mitigations to reduce potential significant impacts below established thresholds. The Draft PA/EIS/EIR reflects a good-faith effort to investigate and disclose environmental impacts of the Project (see CEQA Guidelines Sections 15003(i), 15151), and the mitigation measures are legally adequate. CEQA states that formulation of mitigation measures may specify performance standards which would mitigate the significant effects of the Project and which may be accomplished in more than one specified way (see CEQA Guidelines Section 15126.5(a)(1)(B)). The Draft PA/EIS/EIR identified mitigation measures that require the preparation of a more precise mitigation plan after certification of the EIR, which is acceptable under CEQA provided that the agency "commits itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of approval." *Sacramento Old City Association v. City Council* (1991) 229 Cal. App. 3d 1011, 1028-1029.

The commenter states that the Draft PA/EIS/EIR and its technical appendices have been reviewed with assistance from experts Matt Hagemann and Kaitlyn Heck of Soil/Water/Air Protection Enterprise ("SWAPE"). Matt Hagemann's and Kaitlyn Heck's comments are addressed in Responses 25-20 through 25-29.

25-4 The commenter's statement of interest is acknowledged. No further response is necessary.

25-5 The commenter's summary of NEPA and CEQA's standards for project descriptions is acknowledged. However, the comment provides no facts, reasonable assumptions based upon facts, expert opinion supported by facts, or other evidence suggesting that the Draft PA/EIS/EIR is inaccurate or inadequate. Unsubstantiated opinion is not evidence (CEQA Guidelines Section 15384(a)).

25-6 The comment states that the description of the Proposed Action is inadequate because it does not fully identify a source for water to be used for the Project, including decommissioning. As discussed in subsections 2.3.3.8, 2.3.4.8, 4.2.1, and 4.20.3.1, two separate water sources were analyzed in detail, including groundwater as the Applicant's proposed water supply, and an offsite source in case onsite groundwater production is not feasible. In both cases, the worst case situation was evaluated. Should groundwater be used as the water supply, the PA/EIS/EIR presents modeling results for the highest possible groundwater withdrawal rate. Should an offsite source be used, the PA/EIS/EIR describes the specific source, and also evaluates the impact of the water deliveries by truck.

The suggestion that the Draft PA/EIS/EIR fails to include an accurate, complete and stable Project description because the document analyzes alternative sources of water is not supported by CEQA. The commenter faults the Draft PA/EIS/EIR for failing to demonstrate, through testing, that obtaining water from on-site wells is feasible and failing to demonstrate that the Palo Verde Irrigation District ("PVID") has the resources and authority to supply water to the Project. The comment fails, however, to identify any issues with the analysis of the significant environmental impacts of obtaining water from either source and furthermore fails to show that these fully analyzed alternatives are infeasible. The Draft PA/EIS/EIR includes a Numeric Groundwater Modeling Report that concludes not only that the necessary water is available, but that its use will not significantly impact adjacent water supply wells or the groundwater basin storage. The Water Supply Assessment for the Project concludes the same. Based on the substantial evidence, there is no reason to doubt that groundwater will be insufficient for the Project and even if it is, a backup source has been analyzed.

To address AJBC's other points, water use during decommissioning is discussed in Section 4.20.3.1. It is not feasible to precisely predict the future water needs for decommissioning, as well as the water supply to meet those needs. Additional environmental review may be needed when the time comes to decommission the Project. For now, the agencies can only estimate that the impacts will be similar.

25-7 The County of Riverside respectfully disagrees with the unsubstantiated opinion in this comment that the Draft PA/EIS/EIR presents inaccurate or incomplete environmental setting information regarding water resources. To the contrary, Draft PA/EIS/EIR Section 3.20.1 accurately describes the actual physical environmental conditions in the local and regional area as they relate to surface water drainage, groundwater conditions, and surface water hydrology and water quality. The description provided is consistent with the requirements of CEQA Guidelines Section 15125 and is sufficiently comprehensive to allow decision makers to consider the Project's potential significant impacts in their full environmental context. The comment suggests that "highly relevant" information has been omitted, but provides no information about what that missing data may be. Without facts, data, or other evidence to support the assertion, the County has insufficient information about the concern to provide a more detailed response.

25-8 The comment states that failure to characterize onsite groundwater prior to the Draft PA/EIS/EIR results in an inadequate analysis. Section 3.20.1.1 of the Draft PA/EIS/EIR describes groundwater conditions in the area in detail, and that description is sufficient to evaluate potential groundwater impacts. An analysis of groundwater with respect to the Accounting Surface is provided in subsections 3.20.1.1 and 4.20.3.1, and concludes that impacts to the Accounting Surface are unlikely. Mitigation Measure WATER-4 specifies the monitoring methods to be used to ensure that groundwater withdrawal impacts do not exceed those predicted in the analysis.

The comment selectively pulls two lines from separate sections of the EIR and presents them as a block quote in an attempt to fabricate an argument that the Project will cause ground and/or surface water contamination by releasing residual pesticides or other unexamined contaminants into the environment. This conclusion is not supported by the substantial evidence in the record.

First, although the Draft PA/EIS/EIR notes in that "[b]ased on the historical agricultural use of the private land parcel, there is the potential for residual pesticides to be present in surface and subsurface soils on that part of the Project area", the potential presence of low concentrations of agricultural chemicals on the project site is not identified as a potential significant environmental impact. Based on the historical agricultural use of the property, the 2015 Phase I Environmental Site Assessment for the First Solar Desert Quartzite Solar Project Site (ESA, see Appendix Q) acknowledged that there is the potential for residual pesticide concentrations in the surface and subsurface soils. However, the ESA did not recognize this as a Recognized Environmental Condition (REC) as no mixing or storage of large quantities of pesticides was identified during the site reconnaissance, owner interviews, or the review of historical data and/or regulatory databases. In addition, as also recognized in the ESA, while chemical retention in surface and subsurface soils could be of concern, the majority of agricultural chemicals degrade rapidly in the presence of ultraviolet light from the sun. Further, most newer-formulated chemicals have lower retention time especially at the lower application concentrations directed by regulatory agencies. Based on historic photographs, agricultural use of the property began, at the earliest, in 1982 and potentially did not begin until 1990. By the time the current owner acquired the property around 2000, agricultural use of the property had ceased and did not resume. Given the timing of the agricultural operations and lack of evidence of significant pesticide use, residual contamination, if any, is unlikely to be significant. Indeed, DDT, cited by the commenter as a potential concern, was banned from use in the US in 1972, at least a decade before agricultural operations began on the property.

Second, the recognition in the Draft PA/EIS/EIR that "[g]round disturbance related to construction of Alternatives 1, 2, or 3 could potentially degrade water quality through the inadvertent release of hazardous materials" does not refer to existing hazardous materials. This observation, on page 4.20-19 of the Draft PA/EIS/EIR, not 4.2-19, refers to CEQA Consideration HYD-1, which addresses the potential for hazardous materials used in the construction process (not preexisting onsite) to result in contamination. Monitoring for groundwater impacts (WATER-4) due to these activities is an appropriate mitigation measure. The requirement is not being used to assess baseline conditions after the fact, but to ensure that hazardous materials management requirements imposed by other mitigation measures are having the desired, protective effects.

Finally, the commenter characterizes Mitigation Measure HAZ-1, which requires the Applicant to perform a limited Phase II Environmental Site Assessment (Phase II) to establish pre-Project groundwater quality prior to beginning construction, as evidence of an improperly deferred baseline analysis. Because the Draft PA/EIS/EIR analyzes alternative water sources for construction, the condition of groundwater is not relevant to a pre-construction assessment of the Project impacts. If the water is contaminated, the Applicant will not be able to use it for dust control and other measures. If it is not contaminated, the Phase II results will be used to assess the impacts of the project on groundwater by providing a baseline for comparison with future monitoring (as required, for example, by WATER-4). Because groundwater is located 138 feet below ground surface (bgs), grading, pile driving, and other construction activities will not exacerbate any pre-existing contamination and a detailed investigation of this aspect of water quality was not required to establish baseline conditions for purposes of preparing the Draft PA/EIS/EIR.

HAZ-1 also requires that the Applicant remove approximately two dozen small plastic (one quart to one gallon) partially filled oil and lubricant containers observed within the northeast corner of the private parcel during the site reconnaissance for the 2015 ESA and remove any contaminated soil. No evidence of contaminated soil (staining, distressed vegetation, etc.) was noted in the 2015 ESA, accordingly the evidence in the record did not support a requirement to further investigate these conditions. In addition, given the small volume of materials, impacts of a release, if any, would not be significant.

It is also worth noting that, in response to the January 2015 ESA, the Applicant immediately conducted a Phase II investigation of the well on private land. The sample taken did not have a petroleum odor or sheen; the water was clear with no apparent suspended visible material observed. Laboratory certified analytical results detected only molybdenum at concentrations of 72 micrograms per liter (µg/l), below the applicable Regional Water Quality Control Board (RWQCB) Environmental Screening Level (ESL) for potential drinking water of 78 µg/L and non-drinking water of 240 µg/L. Furthermore, one of two wells on BLM land identified for further testing in HAZ-1 will not be impacted by any of the project alternatives (unless determined to be a suitable source of construction water) and unlike the private well, no debris was found in the area of these wells to even suggest improper disposal activities. Additional investigation of the wells is according only warranted, as noted above, if they will be used as a source of construction water and to help distinguish future impacts of the project from existing conditions. These investigations are not improperly deferred under CEQA. (See *City of Maywood v. LAUSD* (2012) 208 Cal.App.4th 362,409 (upholding an agency's certification of an EIR that deferred Phase II soil sampling after a preliminary investigation).)

25-9 The comment states that the document failed to establish surface water quality information for the Colorado River. Draft PA/EIS/EIR Section 3.20.1.2 discusses surface water, including a description of how stormwater runoff from the site flows towards the Colorado River 11 miles away, the role of the PVID canals in stormwater flow, beneficial uses in both the PVID canals and the Colorado River, and surface water quality in the canals. The comment cites PA/EIS/EIR sections that describe the surface water flow conditions from the Project area to the

PVID canal system, which is the next receiving water body downstream of the Project area, and which acknowledges that water quality in the PVID canals has been affected by agricultural activities. Because the Project would not involve agriculture, it would not contribute to these impacts. The comment goes on to discuss potential impacts due to sediment transport, but does not acknowledge the results of surface water modeling, presented in Draft PA/EIS/EIR Section 4.20.3.1, which demonstrates that sediment transport impacts would be limited. Impacts of the project on surface water quality leaving the site are discussed in Sections 4.20.3.1 and 4.20.4, and concluded that no significant impacts would occur. The comment states that the description of the PVID outfall is not a complete description of water resources "in the Project area". However, the discussion in the PA/EIS/EIR does describe and analyze impacts to the nearest downstream receiving water body, and finds no impacts. Additional water quality data for water bodies further downstream from the canals is not relevant.

The comment mistakenly concludes from representations in the Draft PA/EIS/EIR that ephemeral streams at the Project site drain toward the Colorado River, that these streams drain *to* the Colorado River. The Army Corps of Engineers has determined that the Project will not impact waters of the United States, including the Colorado River. There are consequently no impacts for the County and BLM to analyze.

25-10 This generalized statement of concern about the evidence supporting the Draft PA/EIS/EIR's analysis of impacts to air quality and public health is acknowledged. However, because the comment does not explain the basis for the comment or include data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comment as required by CEQA Guidelines Section 15204(c), the County has insufficient information to provide a more detailed response. Regardless, the Draft PA/EIS/EIR provides a detailed analysis of all of the potential direct, indirect, and cumulative physical environmental impacts that may occur and provides an appropriate level of detail for public review and informed decision-making.

25-11 The comment objects to the rationale provided in the Draft PA/EIS/EIR for not performing a health risk assessment, which was that the Project does not fall into the list of project types that trigger preparation of a health risk assessment under MDAQMD guidelines. The comment states that a health risk assessment should have been performed anyway, because the Project would have significant air quality impacts during construction and decommissioning.

As the commenter states, the nearest sensitive receptor to the Project site is located approximately 3,700 feet north of the northeast corner of the Alternative 1, 2, or 3 boundary. While the MDAQMD's CEQA and Federal Conformity Guidelines (MDAQMD CEQA Guidelines; August 2016) do not prohibit evaluation of impacts on sensitive receptors located farther away, the 1,000-foot boundary is a typical screening level threshold and as the MDAQMD Guidelines state, projects within the specified distance to an existing sensitive receptor "must be evaluated using the significance threshold criteria number 4." Since Alternatives 1, 2, or 3, are not within the specified distances, MDAQMD and the County expect that impacts to sensitive receptors would be less than significant, and therefore the Project does not need to conduct a quantitative construction health risk assessment. The 1,000-foot boundary is consistent with guidance and evaluation distances used by other agencies throughout the state, such as the Bay Area Air Quality Management District (BAAQMD; May 2017 CEQA Air Quality Guidelines). The 1,000-foot boundary is a result of research findings published by the California Air Resources Board (CARB), which are summarized in the CARB Air Quality and Land Use Handbook: A Community Health Perspective (2005). CARB's Air Quality and Land Use Handbook indicates that traffic-related pollutants were higher than regional levels within approximately 1,000 feet downwind and that differences in health-related effects could be attributed in part to heavy vehicle and truck traffic within 300 to 1,000 feet of receptors. Additionally, ARB recommended avoiding siting sensitive land uses within 1,000 feet of a distribution center and major rail yard, which supports the use of a 1,000 feet evaluation distance. Further, studies have shown that concentrations of particulate matter (a toxic air contaminant) tend to be reduced substantially at distances greater than 1,000 feet from sources (Zhu et al. 2002). Thus, given that the nearest sensitive receptor is located at least 3 times the evaluation distance provided in the MDAQMD guidelines, it is anticipated impacts to sensitive receptors would be less than significant and a quantitative construction health risk assessment is not required nor would it lend itself to any additional detail or analysis that would contribute to informed decision-making.

25-12 The comment states that the failure to perform a health risk assessment is inconsistent with guidance from the Office of Environmental Health Hazard Assessment (OEHHA). None of the cited protocols, including MDAQMD's CEQA and Federal Conformity Guidelines and the Office of Environmental Health Hazard Assessment's ("OEHHA's") Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments, direct lead agencies to consider sensitive receptors beyond the search area used in the Draft PA/EIS/EIR . Indeed, the comment itself notes that MDAQMD's guidelines do not require an HRA for this kind of Project. Agencies have been instructed by the courts not to write their own requirements into CEQA, thus arbitrarily revising the standards on a project-specific basis would be improper.

As stated in Response to Comment 25-11, the nearest sensitive receptor is located approximately 3,700 feet north of the northeast corner of Alternative 1, 2, and 3 boundary, which is a considerable buffer distance and a longer distance than the MDAQMD-recommended evaluation distance for preparation of quantitative health risk assessments. OEHHA's recommended methodology describes how (and not when) an HRA should be conducted.

In addition to the considerable buffer distance between the nearest sensitive receptor and the northeast Project boundary, construction activities would span across the entire 3,714-acre Project site and the traffic to and from the site does not travel toward this receptor. Therefore, emissions would be generated at distances from 0.7 mile (3,700 feet) to approximately 4 miles (20,000 feet) from sensitive receptors. In addition, as shown in Appendix A, the majority of the construction (PV Array installation) would occur approximately 840 feet away from the northeast boundary of Alternatives 1, 2, and 3. Due to large buffer distance to the nearest sensitive receptor and highly dispersive nature of diesel PM emissions, impacts to sensitive receptors during construction would be less than significant and further analysis is not required.

Even the closest receptors, which are not within the range where guidance recommends a HRA, would not be exposed for the full 25 month construction period.

25-13 The comment summarizes the results of a risk assessment performed by their contractor, which they say concludes that significant health risk impacts would occur.

As mentioned in Response to Comments 25-11 and 25-12, a quantitative health risk assessment is not required due to the substantial distance to the nearest sensitive receptors. Construction activities are anticipated to last approximately 25 months and would cease following completion of the Project. The screening level health risk assessment presented by SWAPE unrealistically assumes all emissions are occurring at a distance of 3,700 feet from the receptor. However, construction activities would span across the entire 3,714-acre Project site. Therefore, emissions would be generated at distances from 0.7 mile (3,700 feet) to approximately 4 miles (20,000 feet) from sensitive receptors. The concentration gradient would decrease over that distance. In addition, the majority of the construction (PV Array installation) would occur at least approximately 840 feet away from the northeast boundary of Alternatives 1, 2, and 3. As such, the screening level analysis is not an accurate representation of how emissions would be dispersed across the entire Project site and at substantial distances from the nearest sensitive receptor. Due to the nature of PV installation, construction emissions would occur intermittently throughout the day, as construction equipment is required, rather than as a constant plume of emissions from the Project site. Furthermore, the emission rate used in the screening HRA (3,820 lbs of PM10 exhaust) includes off-site emissions that would take place at further distances from the receptor.

AERSCREEN is a conservative screening level approach that calculates a maximum 1-hour concentration which is then scaled by a factor of 0.1 to calculate an annual average concentration. This concentration assumes a number of conservative factors. The wind speed will not always disperse the emissions toward the receptor, as shown in Figure 4 of Appendix W of the Draft PA/EIS/EIR, the winds blow from the south to southwest approximately 27% of the year. Furthermore, construction would occur only during daytime hours which would eliminate stable nighttime hours which typically result in the highest one hour concentrations from low-level fugitive sources. We are unable to recreate the AERSCREEN analysis without additional information such as adjust u* selection, urban/rural selection, albedo, surface roughness and Bowen ratio values. In any event, Aermod is the analysis tool that is the industry standard for conducting HRA’s because it allows a much more refined analysis.

In addition, the model used in the Draft PA/EIS/EIR evaluated construction occurring between December 2016 and December 2018 (Appendix W, Air Quality and Greenhouse Gas Technical Report). Given that construction will occur later than this time period and since exhaust emissions from construction equipment fleet are expected to decrease over time as stricter standards take effect, the air quality analysis and emissions estimates presented in the Draft PA/EIS/EIR are conservative. As construction occurs in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions. Further, as stated in revised Mitigation Measure AQ-3, non-road vehicles and equipment used during construction would meet or exceed the US EPA Tier 4 exhaust standards for heavy-duty non-road compression-ignition engines to the maximum extent feasible. Off-road construction equipment with Tier 4 engines would typically result in an additional 50 to 90 percent reduction in exhaust PM emissions from the use of Tier 2 equipment, depending on the horsepower of the equipment (EPA 2016). As such, the use of Tier 4 engines would further decrease exposure of toxic air contaminants to sensitive receptors.

Due to the large and varying buffer distance to the sensitive receptors, highly dispersive nature of diesel PM emissions, and implementation of Mitigation Measure AQ-3, impacts to sensitive receptors during construction would be less than significant and further analysis is not required. SWAPE's analysis uses unmitigated data that did not consider AQ-3 which requires all retrofitted construction equipment to be outfitted with Best Available Control Technology (BACT) for emission reductions of PM which can reduce PM emissions by 75 to 85 percent. The calculations are not representative of the Project as it would be approved nor does it illustrate an actual air quality impact.

25-14 The comment states that the air emission analysis in the Draft PA/EIS/EIR was incomplete, because it did not include idling emissions.

As stated in Mitigation Measure AQ-3 and consistent with Airborne Toxic Control Measure set forth in Title 13, California Code of regulations (CCR), Section 2485, idling of diesel-fueled commercial motor vehicles is limited to no longer than 5 minutes. The regulation consists of new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck's main engine. Under the new engine requirements, 2008 and newer model year heavy-duty diesel engines need to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling or optionally meet a stringent oxides of nitrogen idling emission standard. Emissions producing alternative technologies such as diesel-fueled auxiliary power systems (APS) and fuel-fired heaters are also required to meet emission performance requirements that ensure emissions are not exceeding the emissions of a truck engine operating at idle. Specifically, the regulation requires diesel APSs installed on trucks with 2007 and newer engines to control particulate matter (PM) emissions by either routing the APS exhaust through the PM trap of the truck engine or by retrofitting the diesel APS with a verified level 3 PM control device that reduces PM emissions by at least 85 percent. Fuel fired heaters installed on trucks with 2007 and newer engines are also required to meet the Ultra-Low Emission Vehicle requirements specified in the Low Emission Vehicle regulations. These requirements are effective beginning in 2008 (CARB 2016). As such, with implementation of Mitigation Measure AQ-3 which limits idling and requires that on-road vehicles should meet or exceed model year 2010 emission standards, emissions associated with idling would be minimal. For example, assuming 14,400 truck deliveries and 57,000 water deliveries would be required over the course of construction would result in an average of approximately 136 trucks per day over the 25-month construction period. Assuming each truck would idle ten minutes per day (five minutes upon arrival and five minutes upon departure), would result in an increase of approximately 3 pounds per day of NOx and less than one pound per day of PM10, or less than one percent of the total maximum daily NOx and PM10 emissions presented in the Draft PA/EIS/EIR. As such, emissions associated with idling would be minimal and therefore would not materially affect the analysis, conclusions, or mitigation measures. Construction emissions would continue to exceed the applicable MDAQMD daily and annual thresholds for NOx, PM10, and PM2.5, resulting in a significant and unavoidable impact.

In focusing on construction equipment emissions, this comment ignores the fact that such emissions are not the most significant or substantial sources of construction emissions. As explained in the Draft PA/EIS/EIR, "The vast majority of Project-related PM10 and PM2.5 emissions (approximately 88 percent) are not generated onsite, but are generated by worker vehicles and delivery trucks traversing the unpaved, 5.6-mile long segment of 16th Avenue/Seeley Avenue between the site entrance and the beginning of pavement near SR-78. Mitigation Measure TRN-4 would require that the Applicant maintain this segment, during construction activities at the Project area to control fugitive dust. This measure would reduce emissions of PM10 and PM2.5 during construction substantially." Neither ABJC's comments nor SWAPE's analysis demonstrates that significant impacts have been overlooked.

25-15 The comment states that the air emission analysis in the Draft PA/EIS/EIR was incomplete, because it did not include an analysis of decommissioning emissions.

Section 4.2.3.1 of the Draft PA/EIS/EIR quantifies construction emissions, and compares them to applicable thresholds. Section 4.2.4 of the Draft PA/EIS/EIR concludes that the impacts of these emissions would be temporary, significant, and unavoidable. As stated in the comment, the text goes on to state that decommissioning emissions would be similar to those occurring during construction. Because decommissioning would occur more than 30 years in the future, any quantitative estimate of decommissioning emissions would be speculative. However, a statement that technological improvements would likely result in reduced emissions is reasonable, especially since this statement is not used to justify a conclusion that the emissions would be anything other than significant and unavoidable.

25-16 The comment states that the air emission analysis in the Draft PA/EIS/EIR fails to incorporate all feasible mitigation, and lists additional mitigation that should be required.

As stated in Response to Comment 25-13, the Draft PA/EIS/EIR modeled construction occurring between December 2016 and December 2018 (Appendix W, Air Quality and Greenhouse Gas Technical Report). Given that Project construction has not begun, and exhaust emissions from construction equipment fleets are expected to decrease over time as stricter standards take effect, the air quality analysis and emissions estimates presented in the Draft PA/EIS/EIR are conservative. As construction occurs in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions. Thus, it is anticipated that actual emissions will be lower than the emissions presented in the Draft PA/EIS/EIR. In addition, the mitigation measures suggested by the commenter are included in Mitigation Measure AQ-3, Construction Emissions Reduction, which requires that off-road diesel-powered construction equipment fleets used on the Project shall be composed in compliance with CARB In-Use Off-Road Vehicle Regulation rules. In addition, all retrofitted construction equipment shall be outfitted with Best Available Control Technology devices certified by the CARB; non-road vehicles and equipment would meet or exceed the US EPA Tier 4 exhaust emissions standards for heavy-duty non-road compression-ignition engines to the maximum extent feasible (e.g., construction equipment, nonroad trucks, etc.); and, as feasible, reduce emissions of particulate matter and other pollutants by using alternative clean fuel technology such as electric, hydrogen fuel cells, and propane-powered equipment or compressed natural gas-powered equipment with oxidation catalysts instead of gasoline- or diesel-powered engines.

25-17 The comment compares air emission and GHG emission calculations, and cites differences in their analysis to suggest that the GHG emission estimates are not accurate.

The technical reports developed by the Applicant are just one component of the information used to support the environmental analysis in the PA/EIS/EIR. Before using quantitative information from the technical reports, the County and its third-party EIR contractor conduct technical reviews and double-check calculations presented in those reports. In this case, the County and its contractor double-checked the GHG emissions estimates for construction reported in Table 4.4 of the Air Quality and Greenhouse Gas Technical Study (Appendix W) against the 25 monthly emissions estimates in Appendix A of that report, and determined that some of the values presented in Table 4.4 were in error. Instead of using the incorrect value from Table 4.4 in Table 4.8-2 of the Draft PA/EIS/EIR, the value was corrected. This is reported in footnote 2 of Table 4.8-2 of the Draft PA/EIS/EIR, which specifies that the construction GHG emissions were derived from adding the 25 monthly estimates. Footnote 3 of Table 4.8-2 then goes on to specify that the estimates for operations were directly taken from Table 4-4. Therefore, although there may be errors in the information in the supporting technical reports, the County and its contractor have properly double-checked all information before using it, have corrected where corrections are warranted, and have reported in the PA/EIS/EIR the specific source for values that were corrected. Note that the excerpt of Table 4.8-2 presented in the supporting letter by SWAPE shows the footnote numbers on specific reported data, but does not present the accompanying footnotes which describe the source of those data.

25-18 Similar to comment 25-15, the comment states that GHG emissions calculations are inaccurate because they do not include idling emissions.

See response to comment 25-15.

25-19 The commenter states the Project presents a significant environmental impact that the County has not addressed in the Draft PA/EIS/EIR, and a revised, Draft PA/EIS/EIR that addresses the inadequacies must be recirculated. It is important to note that recirculation is not required where the new information added to the Draft EIR merely clarifies or amplifies or makes insignificant modifications in an adequate Draft EIR. The changes made to the Draft PA/EIS/EIR as a result of the public comments in the Final PA/EIS/EIR represent clarifications to Draft EIR. Therefore, according to CEQA, the Draft PA/EIS/EIR would not require recirculation.

25-20 The commenter has submitted Exhibit A, which includes a letter from Matt Hagemann and Kaitlyn Heck, consultants, regarding the Project. In the first comment of this exhibit, Mr. Hagemann and Ms. Heck summarize the Project description, and make a general statement regarding the adequacy of the analysis of air quality and greenhouse gas impacts. The comment states that Project emissions are underestimated, and are therefore inadequately addressed.

The commenter’s understanding of the Project, including the proposed facilities and intended power output, is consistent with the description provided in Draft PA/EIS/EIR Chapter 2, Proposed Action and Alternatives. The generalized statement about the evidence supporting the Draft PA/EIS/EIR’s analysis of impacts to air quality and public health is acknowledged.

However, because the comment does not explain the basis for the comment or include data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comment as required by CEQA Guidelines Section 15204(c), the County has insufficient information to provide a more detailed response. Regardless, the Draft PA/EIS/EIR provides a detailed analysis of all of the potential direct, indirect, and cumulative physical environmental impacts that may occur and provides an appropriate level of detail for public review and informed decision-making.

25-21 See response to Comment 25-14. The comment states that the air emission analysis in the Draft PA/EIS/EIR was incomplete, because it did not include idling emissions.

As stated in Mitigation Measure AQ-3 and consistent with Airborne Toxic Control Measure set forth in Title 13, California Code of Regulations (CCR), Section 2485, idling of diesel-fueled commercial motor vehicles is limited to no longer than 5 minutes. The regulation consists of new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck's main engine. Under the new engine requirements, 2008 and newer model year heavy-duty diesel engines need to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling or optionally meet a stringent oxides of nitrogen idling emission standard. Emissions producing alternative technologies such as diesel-fueled auxiliary power systems (APS) and fuel-fired heaters are also required to meet emission performance requirements that ensure emissions are not exceeding the emissions of a truck engine operating at idle. Specifically, the regulation requires diesel APSs installed on trucks with 2007 and newer engines to control particulate matter (PM) emissions by either routing the APS exhaust through the PM trap of the truck engine or by retrofitting the diesel APS with a verified level 3 PM control device that reduces PM emissions by at least 85 percent. Fuel fired heaters installed on trucks with 2007 and newer engines are also required to meet the Ultra-Low Emission Vehicle requirements specified in the Low Emission Vehicle regulations. These requirements are effective beginning in 2008 (CARB 2016). As such, with implementation of Mitigation Measure AQ-3 which limits idling and requires that on-road vehicles should meet or exceed model year 2010 emission standards, emissions associated with idling would be minimal. For example, assuming 14,400 truck deliveries and 57,000 water deliveries would be required over the course of construction would result in an average of approximately 136 trucks per day over the 25-month construction period. Assuming each truck would idle ten minutes per day (five minutes upon arrival and five minutes upon departure), would result in an increase of approximately 3 pounds per day of NOx and less than one pound per day of PM10, or less than one percent of the total maximum daily NOx and PM10 emissions presented in the Draft PA/EIS/EIR. As such, emissions associated with idling would be minimal and therefore would not materially affect the analysis, conclusions, or mitigation measures. Construction emissions would continue to exceed the applicable MDAQMD daily and annual thresholds for NOx, PM10, and PM2.5, resulting in a significant and unavoidable impact.

25-22 See response to Comment 25-15. The comment states that the air emission analysis in the Draft PA/EIS/EIR was incomplete, because it did not include an analysis of decommissioning emissions.

Section 4.2.3.1 of the Draft PA/EIS/EIR quantifies construction emissions, and compares them to applicable thresholds. Section 4.2.4 of the Draft PA/EIS/EIR concludes that the impacts of these emissions would be temporary, significant, and unavoidable. As stated in the comment, the text goes on to state that decommissioning emissions would be similar to those occurring during construction. Because decommissioning would occur more than 30 years in the future, any quantitative estimate of decommissioning emissions would be speculative. However, a statement that technological improvements would likely result in reduced emissions is reasonable, especially since this statement is not used to justify a conclusion that the emissions would be anything other than significant and unavoidable.

25-23 See response to Comment 25-16. The comment states that the air emission analysis in the Draft PA/EIS/EIR fails to incorporate all feasible mitigation, and lists additional mitigation that should be required.

As stated in Response to Comment 25-13, the 2018 PA/EIS/EIR assumed construction would occur between December 2016 and December 2018 (Appendix W, Air Quality and Greenhouse Gas Technical Report). Given that Project construction has not begun, and exhaust emissions from construction equipment fleets are expected to decrease over time as stricter standards take effect, the air quality analysis and emissions estimates presented in the 2018 PA/EIS/EIR are conservative. As construction occurs in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions. Thus, it is anticipated that actual emissions will be lower than the emissions presented in the 2018 PA/EIS/EIR. In addition, the mitigation measures suggested by the commenter are included in Mitigation Measure AQ-3, Construction Emissions Reduction, which requires that off-road diesel-powered construction equipment fleets used on the Project shall be composed in compliance with CARB In-Use Off-Road Vehicle Regulation rules. In addition, all retrofitted construction equipment shall be outfitted with Best Available Control Technology devices certified by the CARB; non-road vehicles and equipment would meet or exceed the US EPA Tier 4 exhaust emissions standards for heavy-duty non-road compression-ignition engines to the maximum extent feasible (e.g., construction equipment, nonroad trucks, etc.); and, as feasible, reduce emissions of particulate matter and other pollutants by using alternative clean fuel technology such as electric, hydrogen fuel cells, and propane-powered equipment or compressed natural gas-powered equipment with oxidation catalysts instead of gasoline- or diesel-powered engines. (As explained in other responses to comments, the recommendations do not take into account the feasibility of obtaining the proposed equipment in the remote location of the Project. The construction site does not have, for example, the necessary infrastructure to recharge electric and hybrid equipment on a large scale and as a practical matter that infrastructure is not available in the area of the Project.)

25-24 See response to Comment 25-11. The comment objects to the rationale provided in the Draft PA/EIS/EIR for not performing a health risk assessment, which was that the Project does not fall into the list of project types that trigger preparation of a health risk assessment under MDAQMD guidelines. The comment states that a health risk assessment should have been performed anyway, because the Project would have significant air quality impacts during construction and decommissioning.

As the commenter states, the nearest sensitive receptor to the Project site is located approximately 3,700 feet north of the northeast corner of the Alternative 1, 2, or 3 boundary. While the MDAQMD's CEQA and Federal Conformity Guidelines (MDAQMD CEQA Guidelines; August 2016) do not prohibit evaluation of impacts on sensitive receptors located farther away, the 1,000-foot boundary is a typical screening level threshold and as the MDAQMD Guidelines state, projects within the specified distance to an existing sensitive receptor "must be evaluated using the significance threshold criteria number 4." Since Alternatives 1, 2, or 3, are not within the specified distances, the Project does not need to conduct a quantitative construction health risk assessment and impacts to sensitive receptors would be less than significant. The 1,000-foot boundary is consistent with guidance and evaluation distances used by other agencies throughout the state, such as the Bay Area Air Quality Management District (BAAQMD; May 2017 CEQA Air Quality Guidelines). The 1,000-foot boundary is a result of research findings published by the California Air Resources Board (CARB), which are summarized in the CARB Air Quality and Land Use Handbook: A Community Health Perspective (2005). CARB's Air Quality and Land Use Handbook indicates that traffic-related pollutants were higher than regional levels within approximately 1,000 feet downwind and that differences in health-related effects could be attributed in part to heavy vehicle and truck traffic within 300 to 1,000 feet of receptors. Additionally, ARB recommended avoiding siting sensitive land uses within 1,000 feet of a distribution center and major rail yard, which supports the use of a 1,000 feet evaluation distance. Further, studies have shown that concentrations of particulate matter (a toxic air contaminant) tend to be reduced substantially at distances greater than 1,000 feet from sources (Zhu et al. 2002). Thus, given that the nearest sensitive receptor is located at least 3 times the evaluation distance provided in the MDAQMD guidelines, it is anticipated impacts to sensitive receptors would be less than significant and a quantitative construction health risk assessment is not required.

25-25 See response to Comment 25-12. The comment states that the failure to perform a health risk assessment is inconsistent with guidance from the Office of Environmental Health Hazard Assessment (OEHHA).

As stated in Response to Comment 25-11, the nearest sensitive receptor is located approximately 3,700 feet north of the northeast corner of Alternative 1, 2, and 3 boundary, which is a considerable buffer distance and a longer distance than the MDAQMD-recommended evaluation distance for preparation of quantitative health risk assessments.

In addition to the considerable buffer distance between the nearest sensitive receptor and the northeast Project boundary, construction activities would span across the entire 3,714-acre Project site and the traffic to and from the site does not travel toward this receptor. Therefore, emissions would be generated at distances from 0.7 mile (3,700 feet) to approximately 4 miles (20,000 feet) from sensitive receptors. In addition, as shown in Appendix A, the majority of the construction (PV Array installation) would occur approximately 840 feet away from the northeast boundary of Alternatives 1, 2, and 3. Due to varying buffer distance to the nearest sensitive receptor and highly dispersive nature of diesel PM emissions, impacts to sensitive receptors during construction would be less than significant and further analysis is not required.

25-26 See response to Comment 25-13. The comment summarizes the results of a risk assessment performed by their contractor, which they say concludes that significant health risk impacts would occur.

As mentioned in Response to Comments 25-11 and 25-12, a quantitative health risk assessment is not required due to the substantial distance to the nearest sensitive receptors. Construction activities are anticipated to last approximately 25 months and would cease following completion of the Project. The screening level health risk assessment presented by SWAPE unrealistically assumes all emissions are occurring at a distance of 3,700 feet from the receptor. However, construction activities would span across the entire 3,714-acre Project site. Therefore, emissions would be generated at distances from 0.7 mile (3,700 feet) to approximately 4 miles (20,000 feet) from sensitive receptors. The concentration gradient would decrease over that distance. In addition, the majority of the construction (PV Array installation) would occur approximately 840 feet away from the northeast boundary of Alternatives 1, 2, and 3. As such, the screening level analysis is not an accurate representation of how emissions would be dispersed across the entire Project site and at substantial distances from the nearest sensitive receptor. Due to the nature of PV installation, construction emissions would occur intermittently throughout the day, as construction equipment is required, rather than as a constant plume of emissions from the Project site. Furthermore, the emission rate used in the screening HRA (3,820 lbs of PM10 exhaust) includes off-site emissions that would take place at further distances from the receptor.

AERSCREEN is a conservative screening level approach that calculates a maximum 1-hour concentration which is then scaled by a factor of 0.1 to calculate an annual average concentration. This concentration assumes a number of conservative factors. The wind speed will not always disperse the emissions toward the receptor, as shown in Figure 4 the winds blow from the south to southwest approximately 27% of the year. Furthermore, construction would occur only during daytime hours which would eliminate stable nighttime hours which typically result in the highest one hour concentrations from low-level fugitive sources. We are unable to recreate the AERSCREEN analysis without additional information such as adjust u* selection, urban/rural selection, albedo, surface roughness and Bowen ratio values.

In addition, the Draft PA/EIS/EIR assumed construction would occur between December 2016 and December 2018 (Appendix W, Air Quality and Greenhouse Gas Technical Report). Given that exhaust emissions from construction equipment fleet are expected to decrease over time as stricter standards take effect, the air quality analysis and emissions estimates presented in the Draft PA/EIS/EIR are conservative. As construction occurs in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions. Further, as stated in revised Mitigation Measure AQ-3, non-road vehicles and equipment used during construction would meet or exceed the US EPA Tier 4 exhaust standards for heavy-duty non-road compression-ignition engines to the maximum extent feasible. Off-road construction equipment with Tier 4 engines would typically result in an additional 50 to 90 percent reduction in exhaust PM emissions from the use of Tier 2 equipment, depending on the horsepower of the equipment (EPA 2016). As such, the use of Tier 4 engines would further decrease exposure of toxic air contaminants to sensitive receptors.

Due to large and varying buffer distance to the sensitive receptors, highly dispersive nature of diesel PM emissions, and implementation of Mitigation Measure AQ-3, impacts to sensitive receptors during construction would be less than significant and further analysis is not required.

25-27 See response to Comment 25-16. The comment states that the air emission analysis in the Draft PA/EIS/EIR fails to incorporate all feasible mitigation, and lists additional mitigation that should be required.

As stated in Response to Comment 25-13, the Draft PA/EIS/EIR assumed construction would occur between December 2016 and December 2018 (Appendix W, Air Quality and Greenhouse Gas Technical Report). Given that Project construction has not begun, and exhaust emissions from construction equipment fleets are expected to decrease over time as stricter standards take effect, the air quality analysis and emissions estimates presented in the 2018 PA/EIS/EIR are conservative. As construction occurs in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions. Thus, it is anticipated that actual emissions will be lower than the emissions presented in the Draft PA/EIS/EIR. In addition, the mitigation measures suggested by the commenter are included in Mitigation Measure AQ-3, Construction Emissions Reduction, which requires that off-road diesel-powered construction equipment fleets used on the Project shall be composed in compliance with CARB In-Use Off-Road Vehicle Regulation rules. In addition, all retrofitted construction equipment shall be outfitted with Best Available Control Technology devices certified by the CARB; non-road vehicles and equipment would meet or exceed the US EPA Tier 4 exhaust emissions standards for heavy-duty non-road compression-ignition engines to the maximum extent feasible (e.g., construction equipment, nonroad trucks, etc.); and, as feasible, reduce emissions of particulate matter and other pollutants by using alternative clean fuel technology such as electric, hydrogen fuel cells, and propane-powered equipment or compressed natural gas-powered equipment with oxidation catalysts instead of gasoline- or diesel-powered engines.

25-28 See response to Comment 25-17. The comment compares air emission and GHG emission calculations, and cites differences in their analysis to suggest that the GHG emission estimates are not accurate.

The technical reports developed by the Applicant are just one component of the information used to support the environmental analysis in the PA/EIS/EIR. Before using quantitative information from the technical reports, the County and its third-party EIR contractor conduct technical reviews and double-check calculations presented in those reports. In this case, the County and its contractor double-checked the GHG emissions estimates for construction reported in Table 4.4 of the Air Quality and Greenhouse Gas Technical Study (Appendix W) against the 25 monthly emissions estimates in Appendix A of that report, and determined that some of the values presented in Table 4.4 were in error. Instead of using the incorrect value in Table 4.8-2 of the Draft PA/EIS/EIR, the value was corrected. This is reported in footnote 2 of Table 4.8-2 of the Draft PA/EIS/EIR, which specifies that the construction GHG emissions were derived from adding the 25 monthly estimates. Footnote 3 of Table 4.8-2 then goes on to specify that the estimates for operations were directly taken from Table 4-4. Therefore, although there may be errors in the information in the supporting technical reports, the County and its contractor have properly double-checked all information before using it, have corrected where corrections are warranted, and have reported in the PA/EIS/EIR the specific source for values that were corrected. Note that the excerpt of Table 4.8-2 presented in the supporting letter by SWAPE shows the footnote numbers on specific reported data, but does not present the accompanying footnotes which describe the source of those data.

25-29 See response to Comment 25-18. Similar to comment 25-15, the comment states that GHG emissions calculations are inaccurate because they do not include idling emissions.

See also response to comment 25-15.

26-1 The commenter describes the nature of the Project and the Project location. The commenter's understanding of the Project, including the proposed facilities and intended power output, is consistent with the description provided in Draft PA/EIS/EIR Chapter 2, Proposed Action and Alternatives (Draft PA/EIS/EIR page 2-1 et seq.). No further response is necessary.

26-2 The past and reasonably foreseeable projects identified in this comment are listed and summarized in Draft PA/EIS/EIR Tables 4.1-1, 4.1-2, and 4.1-3, and their incremental impacts have been taken into consideration as part of the cumulative effects analysis. The incremental impacts of these past, present, and reasonably foreseeable future projects (in combination with those of the Project) are analyzed on a resource-by-resource basis throughout Draft PA/EIS/EIR Chapter 4 to determine whether a significant cumulative effect would result. The comment does not identify any error or oversight in this regard.

The commenter presumes without demonstrating that the governmental agencies serving as CEQA or NEPA lead agencies, or that may have other mitigation responsibility over projects in the cumulative scenario, have exercised their authority improperly or inadequately, resulting in mitigation measures that are lacking. The County disagrees. Regardless, those other agencies' actions in the contexts of other projects do not bear on the adequacy or accuracy of the cumulative effects analysis of this Project. The commenter's conclusory statements unsupported by references to scientific authorities, empirical data, explanatory information, or other evidence are insufficiently specific to allow for a more detailed response. Cumulative effects to biological resources, including mammals and avian species, are analyzed in Draft PA/EIS/EIR Section 4.4.6; cumulative effects to water resources are analyzed in Draft PA/EIS/EIR Section 4.20.6. Impacts to agriculture are evaluated in Draft PA/EIS/EIR Section 4.10.4. The comment does not question the adequacy or accuracy of these analyses, the methodology employed or data relied upon in conducting them, or their conclusions.

The commenter correctly notes that CEQA requires an adequate analysis of direct, indirect, and cumulative impacts and the imposition of mitigation measures (or consideration of alternatives) that would reduce potential significant impacts below established thresholds. The Draft PA/EIS/EIR concludes that the Project would result in a less than significant impact associated with the potential to substantially interfere with migratory wildlife corridors because the Project site is not located within a known wildlife migration corridor or linkage connecting large open space areas; the immediate Project area and surrounding region contains large expanses of open habitat that provide ample amounts of area for local and regional wildlife movement. The comment suggests that the mitigation measures described in the Draft PA/EIS/EIR will not be as effective as claimed; however, the comment provides no data, facts, or expert opinion based on data or facts to support this claim. An unsubstantiated opinion does not constitute substantial evidence and provides no basis to enable the County to provide a substantive response to the concern.

The commenter suggests that the Draft PA/EIS/EIR should be revised and recirculated to resolve perceived inadequacies. Generally, an EIR must be recirculated for additional public review only if "significant new information" is added to the EIR following notice of the initial public review period but prior to final certification (CEQA Guidelines Section 15088.5(a)). Not all new information added to an EIR is significant, and "new information added to the EIR that merely clarifies or amplifies or makes insignificant modifications" does not trigger recirculation (CEQA Guidelines Section 15088.5(b)).

Section 15088.5(a) of the CEQA Guidelines states:

A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the Project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project or a feasible way to mitigate or avoid such an effect (including a feasible Project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation includes, for example, a disclosure showing that:

(5) A new significant environmental impact would result from the Project or from a new mitigation measure proposed to be implemented.

(6) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(7) A feasible Project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the Project, but the Project's proponents decline to adopt it.

(8) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

The fourth example is based on the court's decision in a specific lawsuit and is intended to capture circumstances in which fundamental information is omitted in the Draft EIR and then added after the public comment period has closed. In *Mountain Lion Coalition v. Fish & Game Commission* (1989) 214 Cal. App. 3d 1043, an environmental organization challenged the Fish and Game Commission's adoption of regulations that would have allowed sport hunting of mountain lions to resume within the state based on an environmental analysis that failed to adequately consider cumulative impacts: the analysis inadequately addressed or completely ignored important environmental issues that had been drawn to the agency's attention by the superior court, ignored input from scientists, and failed to support conclusions with references to specific scientific and empirical evidence. In reaching its decision, the court stated: "While technical perfection in a cumulative impact analysis is not required, courts have looked for 'adequacy, completeness, and a good faith effort at full disclosure.' A good faith effort to comply with a statute resulting in the production of information is not the same, however, as an absolute failure to comply resulting in the omission of relevant information." *Id.* at 1052 (citation omitted).

The Desert Quartzite Solar Project Draft PA/EIS/EIR was circulated to responsible agencies, trustee agencies with resources that would be affected by the Project, and interested agencies and individuals. Per CEQA Guidelines Section 15125, baseline conditions for each topical resource area, adequate and complete disclosure of direct, indirect, and cumulative impacts, and mitigation measures, where appropriate, to avoid, minimize, and compensate adverse impacts associated with the proposed Project are described in Chapter 3, Affected Environment, Sections 3.1 through 3.21. The significant unavoidable, irreversible, and irretrievable commitments of resources, short-term uses, and long-term productivity and growth-inducing impacts are analyzed in Chapter 5, Other NEPA and CEQA Considerations.

As discussed in this Final PA/EIS/EIR, no "significant new information" has been added to the Draft PA/EIS/EIR and neither a new significant environmental impact nor a substantial increase in the severity of an existing significant environmental impact has been identified.

Finally, no new feasible alternative or mitigation measure that clearly would lessen the environmental impact(s) of the Project has been identified that the Applicant has declined to adopt. The Draft PA/EIS/EIR is in compliance with applicable CEQA Guidelines and other requirements. Revisions to the Draft PA/EIS/EIR were made in response to public comments, but recirculation is not required.

26-3 Regarding the suggestion that recirculation is needed, see Response 26-2. General assertions that the Draft PA/EIS/EIR contains an inconsistent Project Description; fails to establish an environmental baseline; and fails to identify, analyze, and mitigate to all significant impacts that the Project would have on biological resources are addressed briefly here and in more detail below where each suggestion is described sufficiently to allow a detailed response.

The Commenter's statement that the Project description is deficient is inaccurate. The Project description provided in Chapter 2, Proposed Action and Alternatives, is accurate, stable, and finite. Integral Project facilities are described in Draft PA/EIS/EIR Section 2.3.3, Facilities. It is atypical for detailed final Project design features to be well-established for energy infrastructure projects prior to certification of an EIR. The Draft PA/EIS/EIR conservatively evaluated all potential impacts of the proposed Project for each environmental factor. CEQA, by design, is initiated during the very early planning phases of a Project; therefore, a Project development plan may change due to facets that are either not anticipated or not foreseen until the time the Project is under full and deliberate development. New information or changes in the Project scope and/or design frequently occur during Project refinement and development. These differences or changes of the scope and parameters of the Project development plan by the proponent frequently do not render further scrutiny under CEQA. CEQA requires a general description of the "main features" of the Project, and does not require "all of the details or particulars." *Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal. App.4th 20, 26. A project description is adequate if it provides information sufficient to inform the public and the decision-makers of the full scope of the project.

As described in Response 25-2, the Draft PA/EIS/EIR sets forth an accurate and complete environmental baseline and analyses of the required CEQA topical issue areas. In addition, the

Draft PA/EIS/EIR supplies the public and decision makers with adequate information concerning the potential environmental effects of the proposed Project and describes as necessary feasible mitigations to reduce potential significant impacts below established thresholds. The Draft PA/EIS/EIR reflects a good-faith effort to investigate and disclose environmental impacts of the Project (see CEQA Guidelines Sections 15003(i), 15151), and the mitigation measures are legally adequate. CEQA states that formulation of mitigation measures may specify performance standards which would mitigate the significant effects of the Project and which may be accomplished in more than one specified way (see CEQA Guidelines Section 15126.5(a)(1)(B)). The Draft PA/EIS/EIR identified mitigation measures that require the preparation of a more precise mitigation plan after certification of the EIR, which is acceptable under CEQA provided that the agency "commits itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of approval." *Sacramento Old City Association v. City Council* (1991) 229 Cal. App. 3d 1011, 1028-1029.

The commenter states that the Draft PA/EIS/EIR and its technical appendices have been reviewed with assistance from technical consultant Renee Owens of Sage Wildlife Biology, and requests that the letter provided by Ms. Owens be included in the record of proceedings for the Project. The comments are attached.

26-4 The commenter's statement of interest is acknowledged.

26-5 The comment states that the applicability of DRECP is handled inconsistently within the Draft PA/EIS/EIR, resulting in a failure to meet decision criteria in the CDCA Plan, including minimizing the number of rights-of-way, avoiding sensitive resources, and considering wilderness values.

The comment addresses the BLM's purpose and need for the Project, questioning the applicability of DRECP's land management decisions to the Project, and stating that certain goals and objectives of the CDCA Plan should be incorporated into the purpose and need for the Project.

The purpose and need statement for the Project and the Project itself are not inconsistent with the DRECP and CDCA because the DRECP does not apply to the Project. For the sake of complete analysis and informed decision making, BLM included a comparison of the Project with each and every potentially applicable Conservation Management Action ("CMA") in the DRECP and ultimately concluded that the Project, even though not subject to the plan requirements, complied with almost all of them. BLM recognized, in adopting the DRECP, that this Project site could be developed with utility-scale solar according to pre-existing requirements and made a plan for future conservation and renewable energy development accordingly.

As for whether the Project complies with the Decision Criteria for the Energy Production and Utility Corridors Easement in the CDCA, both ABJC and its consultant cite to criteria for corridor planning that do not apply to the majority of the Project. Moreover, the gen-tie line for the Project is primarily located in a designated corridor and follows the path of other lines, except to the extent necessary to avoid crossing existing and planned lines and to lessen biological impacts. Similarly, the Project does avoid sensitive resources wherever possible. The DRECP was designed to balance the avoidance of sensitive resources and the need for renewable energy development and designated the area as part of the Development Focus Area ("DFA"). This siting decision is consistent with BLM's management objectives.

The allegation that the Project is not consistent with the criteria to "[c]onsider wilderness values and be consistent with final wilderness recommendations" is completely off base, as the Project site has not been designated or even considered for use as wilderness. It has been explicitly designated for renewable energy development. (See also Master Responses 4 and 5a of Appendix AA of the Final PA/EIS/EIR).

26-6 The comment states that the description of the existing environment is inaccurate and incomplete, because it omits or underestimates information regarding biological resources.

The County of Riverside respectfully disagrees with the unsubstantiated opinion in this comment that the Draft PA/EIS/EIR presents inaccurate or incomplete environmental setting information regarding biological resources. To the contrary, Draft PA/EIS/EIR Sections 3.3 and 3.4 accurately describe the actual physical environmental conditions in the local and regional area as they relate to vegetation (page 3.3-1 et seq.) and wildlife (page 3.4-1 et seq.). The environmental setting appropriately emphasizes potentially affected resources that are rare or unique to the region: Federal-listed, state-listed, and other special plant species are described in the setting as are federal- and state-listed wildlife species. The description provided is consistent with the requirements of CEQA Guidelines Section 15125 and is sufficiently comprehensive to allow decision makers to consider the Project's potential significant impacts in their full environmental context. The comment suggests that "highly relevant" information has been omitted, but provides no information about what that missing data may be. Without facts, data, or other evidence to support the assertion, the County has insufficient information about the concern to provide a more detailed response.

26-7 The comment states that the environmental setting has not been defined because, although it describes the species present, it does not provide data on use levels.

The statement in Mitigation Measure WIL-6, that the Applicant shall describe baseline conditions for bird and bat species in the Final BBCS, does not imply that the analysis in the Draft PA/EIS/EIR is inadequate. Specific parameters for some resources, such as the presence and use of the site by birds and bats, the exact existing conditions may vary year-by-year. In these cases, it is appropriate to conduct surveys and identify those conditions in advance of the environmental analysis, but then also repeat the surveys to inform project-specific actions shortly prior to beginning construction. The pre-application bird and bat surveys, upon which the NEPA and CEQA analysis was based, were furthermore complete and rigorous, and the results were presented in the Biological Resources Technical Report in Appendix M. Both acoustic monitoring within the Study Area and roost surveys of sites in the vicinity of the Study Area were conducted for bats. (Draft PA/EIS/EIR at p. 3.4-19.) Three types of general avian surveys were conducted: (1) migratory bird surveys; (2) line transect sampling; and (3) nesting raptor and raven surveys. (Draft PA/EIS/EIR at p. 3.4-15.) Table 4.4-2 provides a summary of the likely presence of a variety of bird and bat species within the various alternatives based on these results. The requirement to update these results shortly prior to construction, in order to better inform efforts to avoid sensitive species during construction, does not imply that the previous surveys were incomplete or inadequate.

26-8 The comment states that the existing environmental setting for the Mojave fringe-toed lizard has not been defined because surveys did not cover the entire site, the number of individuals were not reported for the preliminary surveys, and individuals are difficult to identify in the field.

As discussed in Section 3.3.2.2 of the BRTR (Appendix M), no individuals of the Mojave fringe-toed lizard were identified in the inholding during any survey, and the inholding does not have suitable habitat for the species. Figure 3.4-3 of the Draft PA/EIS/EIR shows that the species is very closely associated with the Pleuraphis rigida vegetation alliance, and that neither this alliance nor any individuals were identified to occur within approximately 1 mile of the inholding. Section 4.1 of the preliminary survey report for the inholding states that “one special status wildlife species, burrowing owl, was determined to be present within the Study Area”. By definition, this statement means that the number of individual Mojave fringe-toed lizards identified during the preliminary survey was zero. Although the species may be difficult to identify in the field, as stated in the comment, the weight of evidence (lack of individuals found during the survey, lack of habitat, and absence of any individuals identified within a mile of the site) strongly supports the absence of the species on the inholding. The comment has provided no information to suggest that the species is present on the inholding, other than to question the survey results because identifying individuals is difficult. In addition, neither ABJC nor its consultant identified alternative methods prescribed for assessing MFTL impacts.

26-9 The comment cites PA/EIS/EIR text regarding the density of black-tailed jack rabbits, and how the density estimate was used to state that golden eagles were expected to forage infrequently on the site. The comment states that the level of use by golden eagles cannot be predicted from the jack rabbit density data.

The conclusion regarding the relationship between the black-tailed jack rabbit density and the quality of the foraging habitat was based on the professional judgment and experience of the authors of the Biological Resources Technical Report (Appendix M). A subsequent search of the literature for data on the density of black-tailed jack rabbits identified a range of 0.04 to 5.2 rabbits per acre (Best 1996) in other locations, supporting the statement that the 0.0035 rabbits per acre on the Project site is relatively low. This information has been added to the PA/EIS/EIR text in Section 3.4.1. The additional data do not change any significance determination, and do not present new information that would warrant recirculation of the Draft PA/EIS/EIR pursuant to 14 CCR Section 15088.5.

26-10 The comment refers to the proximity of foraging habitat to the Project site, and historic data on the presence of raptors to suggest that the Project site would be used for foraging by raptors, resulting in indirect impacts to foraging eagles.

The Draft PA/EIS/EIR (Section 4.4.3.1) acknowledges that the site provides foraging habitat, and presents the results of surveys and locations of nests, in addition to the jack rabbit data, to support a conclusion that foraging would be infrequent. The comment does not specifically identify the foraging habitat that is in proximity to the Project site, nor the historic data on the presence of raptors. Therefore, no changes are made to the PA/EIS/EIR text.

26-11 The comment states that the Draft PA/EIS/EIR omits special status species from the analysis.

This comment does not specifically identify any species which were not analyzed. Based on other public comments, BLM and the County determined that the prairie falcon is a special status species and would have a moderate potential for using the site for foraging. The information regarding the presence of prairie falcon had been discussed on Page 3.4-18, and in Table 4.4-2 of the Draft PA/EIS/EIR, but, for clarification, the prairie falcon has been added to the species list in Table 3.4-1 of the Final PA/EIS/EIR. The addition of the prairie falcon to the list of species does not change any significance determination, and does not present new information that would warrant recirculation of the Draft PA/EIS/EIR pursuant to 14 CCR Section 15088.5.

26-12 The comment summarizes some of the purposes and requirements of CEQA, and concludes by stating that the PA/EIS/EIR failed to provide sufficient information, failed to identify and analyze all potential impacts, failed to identify adequate mitigation, and failed to analyze impacts associated with mitigation measures.

This generalized statement of concern about the evidence supporting the Draft PA/EIS/EIR's analysis of impacts to biological resources is acknowledged. However, because the comment does not explain the basis for the comment or include data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comment as required by CEQA Guidelines Section 15204(c), the County has insufficient information to provide a more detailed response. Regardless, the Draft PA/EIS/EIR provides a detailed analysis of all of the potential direct, indirect, and cumulative physical environmental impacts that may occur and provides an appropriate level of detail for public review and informed decision-making.

26-13 The comment states that the Draft PA/EIS/EIR provides an inconsistent description of light sources in the area, and therefore fails to adequately assess impacts to bats.

The comment claims that the description of lighting is inconsistent by referencing a statement that the Project would include light sources, and then a separate statement that the primary sources of light in the area is vehicles on I-10 and residences at Nicholls Warm Springs/Mesa Verde. One, the statement that the Project would include light sources, is a statement regarding future conditions, after construction is initiated. The other, the statement that the primary source of light is vehicles and residences, is a statement regarding current, existing conditions. Because they address different timeframes, these two statements are not inconsistent with each other.

With respect to the portions of the comment discussing compensatory mitigation, note that there is no regulatory requirement for compensation for loss of bat foraging habitat for the referenced species.

26-14 The comment states that the Draft PA/EIS/EIR does not adequately evaluate the impact to migratory birds. The comment cites the fact that the BBCS had not been completed and provided for review, and states that monitoring (as required in the BBCS and mitigation measures WIL-6) only measures, and does not mitigate, impacts. The comment disagrees with the conclusion that impacts on migratory birds due to collisions with solar panels are not established.

The BBCS has now been completed, and is included within Appendix M of the Final PA/EIS/EIR. Although the Draft PA/EIS/EIR did not include the BBCS, it did include a summary of the required contents of the BBCS, including both mitigation and monitoring measures. In addition, many of the other mitigation measures, including VEG-6 (Worker Environmental Awareness Program), VEG-8 (Avoidance of Biological Resources During Construction), and WIL-7 (Pre-Construction Nest Surveys) include measures that would mitigate, and not just monitor, impacts to migratory birds.

Finally, prior to the publication of the Final PA/EIS/EIR, the agencies acquired more recent bird fatality monitoring data from local solar facilities, which is now incorporated into the analysis of impacts to migratory birds in Section 4.4.3.1. This data included systematic post-construction monitoring data for Desert Sunlight, McCoy, and Blythe. Although none of the associated monitoring reports drew specific conclusions regarding the lake effect or other solar facility impacts to migratory birds, they did correct the raw observation data from these surveys for searcher efficiency and carcass persistence to allow a better understanding of actual mortality numbers, as well as to allow a comparison among these three facilities.

The USFWS Biological Opinion (BO), issued on April 12, 2019, addressed impacts to special status bird species, including the Yuma clapper rail, southwestern willow flycatcher, least Bell’s vireo, and yellow-billed cuckoo. With respect to these species, the BO concluded that the Project would not cause adverse impacts to breeding activities because suitable habitat is not present in the Project area. Although adverse effects could result from collisions with solar panels, power lines, and fences, an analysis of results from other utility-scale solar projects in the Mojave Desert indicated that collision effects at a single project would be unlikely to occur or would be considered a discountable effect. To address the additive risk of multiple hazards on a CDCA Plan level, USFWS and BLM have worked together to develop project-to-project consistency in mortality monitoring, continue to evaluate the risk on a case-by-case basis, and develop project-specific recommendations to avoid adverse effects. The BO concluded that the Project is not likely to adversely affect the four bird species.

The commenter also makes sweeping statements about the inadequacy of the avian monitoring, questioning how the data to be collected will be useful in avoiding impacts. These comments overlook the fact that the Draft PA/EIS/EIR concludes that the Project *will not have* significant impacts to birds and bats that require mitigation. Combined with the bat habitat assessments and surveys, the data to date on avian impacts, gathered on multiple projects throughout the state and in particular at several neighboring projects, does not support a conclusion that solar projects in general, or this Project in particular, will have a significant impact on birds and bats. The data collected through the BBCS will be used to confirm what existing data predicts and for good measure includes other requirements that could be implemented if the Project data deviates from the norm.

26-15 The comment stipulates multiple instances in which mitigation for nesting birds is not adequate. These include statements that some measures (such as VEG-8) rely on observation of behavior, and other measures (such as WIL-7) do not define the persons responsible for surveys. The comment states that reliance on trained workers to identify cannot be considered effective, especially when the training program has not been presented, and that the size of buffer zones should be determined by USFWS or CDFW.

There are a variety of mitigation measures that require pre-construction surveys, avoidance, compensation, and monitoring of impacts to birds. These include VEG-6 (WEAP), VEG-8.10 (avoidance), WIL-6 (BBCS), WIL-7 (pre-construction surveys), and WIL-9 (burrowing owl measures). These cannot be considered to be stand-alone measures. For instance, the fact that the workers trained through the WEAP to identify potential bird impacts are not trained biologists is not a reason not to train them to be observant. This measure is in addition to, not in place of, monitoring by the Designated Biologist and biological monitors. Taken together, these measures are comprehensive in identifying and mitigating impacts to birds.

With respect to establishment of buffer zones, the only special status bird species expected to nest in the Project area is the burrowing owl, and the buffer requirement for the burrowing owl is defined in mitigation measure WIL-9. Additional buffers will be established in the nesting bird plan to be approved by BLM. These measures will be administered by USFWS and CDFW approved biologists. Unqualified workers with unbounded discretion will not make decisions about wildlife protection measures. Commenters' proposal to have USFWS and/or CDFW make these decisions at the project level in real time is not feasible, as the agencies do not have the resources to respond to every situation during development.

26-16 The comment lists several management plans cited in the PA/EIS/EIR, and states that these should be available for public review along with the Draft PA/EIS/EIR. The comment specifically cites the BBCS, Tortoise Mitigation Plan, Raven Management Plan, Desert Kit Fox and Badger Management Plan, and others.

In general, specific project design details and/or management procedures are dictated by law and/or agency policy and guidelines. In each case, the Applicant (or subsequent grant holder) would be required to comply with the applicable law, policy, and/or guidelines. In all cases, plans would be required to be submitted to and approved by BLM and any other agency with regulatory oversight, as detailed in the applicable mitigation measure, before construction (or decommissioning, as appropriate) could begin. Details of the design and operation of the facility are not likely to substantially alter the impacts that have been concluded, and there are measures that would apply from mitigation in the PA/EIS/EIR and from regulation that would control these aspects to further ensure they are not more impactful than what is assumed in the PA/EIS/EIR.

Generally, "[f]ormulation of mitigation measures should not be deferred until some future time. However, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way." (CEQA Guidelines, section 15126.4, subd. (a)(1)(B); see also *SOCA*, 229 Cal.App.3d at pp. 1028-1029.) Consistent with these provisions, courts have found that "[d]eferral of the specifics of mitigation is permissible where the local entity commits itself to mitigation and lists the alternatives to be considered, analyzed and possibly incorporated in the mitigation plan. [Citation.] (*Defend the*

Bay v. City of Irvine (2004) 119 Cal.App.4th 1261, 1275 [15 Cal. Rptr. 3d 176].) An agency "goes too far when it simply requires a project applicant to obtain a biological report and then comply with any recommendations that may be made in the report." (*Ibid*.) In other words, while deferred mitigation is acceptable to an extent, an agency cannot rely on "loose or open-ended or performance criteria. Deferred mitigation measures must ensure that the applicant will be required to find some way to reduce impacts to less than significant levels." (*Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 945 (Rialto Citizens for Responsible Growth).)

Courts have recognized that measures very similar to those criticized by the commenters are not loose or open-ended and satisfy CEQA's requirements. They have upheld, for example, a requirement to conduct pre-construction surveys and establish a buffer around any identified occurrences of the target species. (*Save Panoche Valley v. San Benito County* (2013) 217 Cal.App.4th 503 (*Save Panoche Valley*).) Preconstruction surveys for nesting and breeding birds, buffers around nests, subsequent active monitoring, and measures for potentially relocating nests has been expressly upheld as reasonable by the California Court of Appeal. "[T]hese measures do not improperly defer significant aspects of mitigation. The measures provide for specific actions to be taken upon discovery of a certain species, such as including a set buffer zone. The measures do not call for a mitigation that is simply adopting the recommendations of the survey providers, which would be an improper deferred mitigation. (See *Rialto Citizens for Responsible Growth, supra*, 208 Cal.App.4th 899, 944-945; *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 669-672 [holding that deferral of significant aspects of mitigation a violation of CEQA].) There is thus nothing improper about relying on subsequently developed mitigation plans.

Furthermore, the particular plans cited as being inadequately described – "the BBCS, California burrowing owl mitigation measures based upon California Burrowing Owl Consortium guidelines, and mitigation measures to reduce potential for electrocution, collision, and nesting/perching by migratory birds on overhead power lines, based on APLIC guidelines" – are all, as the comment notes, based on established guidelines and documents prepared for the BLM for at least seven other utility scale projects in the area and many others throughout the state. Ms. Owens' comments, echoed by AJBC, generally allege that the discussion of mitigation is not sufficiently detailed and that "saying that a plan intends to follow guidelines or agency recommendations does not address the specific requirements for mitigation for a specific location." But in failing to discuss the numerous requirements of each plan specified in the draft EIS/EIR, including the guidelines where relied upon, the commenters have failed to alert the agency to the deficiencies in their mitigation proposal. (See *Save Panoche Valley, supra*, 217 Cal.App.4th at p. 526 ["In order to succeed on its arguments, [persons challenging an EIR] need[] to specify what evidence the [lead agency] relied upon in its determination that the mitigation measures would sufficiently preserve and mitigate impacts to the species of special concern, and to show that this evidence could not support the [CEQA] findings."].)

The commenters also appear to take issue with the fact that the mitigation plans described in the draft EIS/EIR might be written by "unnamed experts – or simply administrators . . . ." Neither NEPA nor CEQA impose limitations on who can author mitigation plans. Again, the only relevant question is whether the measures "ensure that the applicant will be required to find some way to reduce impacts to less than significant levels."

26-17 The comment states that the BBCS was not completed at the time of the Draft PA/EIS/EIR, and therefore the mitigation measures were not sufficiently detailed to allow for appropriate review.

Please see responses to comments 26-14, 26-15, and 26-16. Those responses demonstrate that the general requirements of the BBCS were already defined in the Draft PA/EIS/EIR in mitigation measure WIL-6. In addition, the BBCS is not, on its own, the only mitigation measure that addresses impacts to migratory birds. Several other mitigation measures, including VEG-6 (WEAP), VEG-8.10 (avoidance), WIL-6 (BBCS), WIL-7 (pre-construction surveys), and WIL-9 (burrowing owl measures) address those impacts.

26-18 The comment states that the details of compensatory mitigation are deferred and vague, therefore not allowing public review of the measures. The comment states that the requirement to provide a Vegetation Resources Management Plan (VRMP) prior to construction is deferred mitigation, that mitigation measure 9c does not define activities required as part of the protection of compensation lands, that using desert tortoise habitat as a proxy for compensation for all species is not sufficient, that the cost per acre cannot be determined because the Project footprint has not been defined, and that the necessary characteristics of compensation land have not been defined.

With respect to the text quoted from mitigation measure VEG-9, the comment fails to acknowledge that the required contents of the VRMP are described in more detail within mitigation measure 8.B. With respect to the lack of definition of the activities required as part of the protection of compensation lands, the comment quotes the generic portion of mitigation measure 9.C.I.5.c without noting that the following sentence of that measure states that “these activities may vary depending on the condition and location of the land acquired . . . “. Given the fact that compensation lands cannot be acquired until the final Project acreage is known, mitigation measure 9.C provides substantial detail regarding how those lands are to be identified, acquired, and approved by BLM. In general, the desert tortoise is not used as a proxy for any other species requiring compensation. Of the species present in the Project area, the only ones which require compensation are the desert tortoise, Mojave fringe-toed lizard, burrowing owl, Harwood’s eriastrum and, if found to be present, Couch’s spadefoot toad and State jurisdictional waters. There is no requirement that lands acquired to compensate for impacts to one species be completely separate and in addition to lands acquired to compensate for impacts to another species. Compensation requirements for these various species may be accomplished through nested compensation, if that land is individually appropriate as compensation for each species for which it is acquired. Indeed, CEQA does not require that “mitigation . . . account for every square foot of impacted habitat to be adequate. What matters is that the unmitigated impact is no longer significant.” (*Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1233.) The comment fails to state what policy, guidance or other evidence would require particular types of land or habitat to compensate for a particular species impact and seem to ignore the ratios required by the draft PA/EIS/EIR. The comments, in short, fail to demonstrate how or why the proposed mitigation is inadequate to ensure that significant impacts are reduced to a level of insignificance. The requirements, including options that allow for consideration of different types of valuable habitat (occupied, reclaimable, etc.) are sufficient.

26-19 The comment states that alternatives involving rooftop solar and already degraded agricultural lands should have been evaluated, and cites the environmental and cost advantages of such an alternative.

As noted in the PA/EIS/EIR, Section 2.9.2.4, Table 2-8, additional alternatives were considered. Distributed solar technology was considered, but eliminated from detailed analysis in the PA/EIS/EIR. As described in Section 2.9.2.4, Table 2-8, it was determined that alternatives incorporating distributed generation with utility-scale generation, or looking exclusively at distributed generation, do not respond to the BLM's purpose and need for agency action, which is focused on the siting and management of utility-scale solar energy development on public lands.

Various agency publications identify the need to increase renewable generating capacity from distributed generation and utility-scale sources. While distributed generation could be an alternative for any individual project, with more than 10,500 MW of distributed generation throughout the state, it would not, by itself achieve the RPS goals. The County reviewed the previous documents and did not feel that an update to the distributed generation alternative was warranted. This is also consistent with the BLM's policy decisions to authorize utility-scale renewable energy (see Section 1.3, Purpose and Need for the BLM's management objectives regarding renewable energy).

Distributed generation alternatives have been rejected as infeasible in countless EISs and EIRs across the state. As the California Public Utilities Commission ("CPUC") has previously recognized, distributed generation is an unsuitable substitute for utility scale solar for at least 20 different reasons, including "the potentially time consuming and costly process of going through the interconnection process" for dozens, if not hundreds, of smaller rooftop projects.[1] In addition, there is no evidence that rooftops are commercially available and structurally capable of supporting utility-scale solar projects. In light of these, and still other, considerations, a distributive generation alternative cannot be implemented within a reasonable period of time to achieve California's Renewable Portfolio Standard ("RPS") goals, which are part of the Project objectives.

Cost is another concern. Utility-scale power is not part of a free market economy; prices are regulated and constrained by the CPUC in the interests of ratepayers. A study comparing the costs of 60,000 distributed 5-kilowatt residential-scale (rooftop) systems owned or leased by retail customers and 300 MW of utility-scale solar power plants selling power under long-term purchase power agreements ("PPA") considered "varying investment tax credit (ITC), PV cost, inflation, and financing parameters" and concluded "that customer generation costs per solar

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[1] CPUC California Renewable Distributed Energy Collaborative (Re-DEC), *Potential Challenges to High Penetration of Distributed Renewable Generation* (Dec. 9, 2009) (Renewable DG Challenges Matrix developed following an exhaustive review of documents from the Institute of Electrical and Electronic Engineers, Department of Energy, CPUC proceedings and comments, Federal Energy Regulatory Commission, California Energy Commission, National Renewable Energy Laboratories, and various academic papers); Black & Veatch, Potential Challenges to High Penetration of Distributed Renewable Generation (Dec. 2009); see also Energy + Environmental Economics (E3), *Technical Potential for Local Distributed Photovoltaics in California* (Mar. 2012), www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=7695 (recognizing that rooftop DG systems are "qualitatively different from larger generators" and more expensive to install).

MWh are estimated to be more than twice as high for residential-scale systems than the equivalent amount of utility-scale PV systems."[2]

Finally, the argument for distributed generation alternatives has been unsuccessfully litigated. As the court observed in *Western Watersheds Project v. Salazar*, the suggestion that distributed generation is a feasible alternative to utility-scale solar projects involves a policy fight that utility-scale project opponents "lost when state and federal executives and legislatures enunciated goals and adopted measures relating to renewable energy in support of [utility-scale solar projects.]" No. 2:11-cv-00492-DMG-E, slip op. at 39 (C.D. Cal. Aug. 10, 2011). Similarly, Governor Brown's office, in defense of another utility-scale solar project, noted that "California has determined . . . that the state can achieve its aggressive renewable energy and greenhouse gas reduction targets only by taking a multi-pronged development approach. . . . 'Distributed solar must be viewed as a partner, not a competitor or replacement for utility scale solar.' . . . [L]arge scale solar projects are needed to work in concert with renewable technologies such as wind, geothermal, biomass, tidal energy, and wave energy to meet California's RPS and greenhouse gas emission reduction goals."[3] A distributed generation project cannot accomplish the same objectives as a utility-scale project and is thus not a feasible alternative.

26-20 The commenter states the Project presents a significant environmental impact that the County has not addressed in the Draft PA/EIS/EIR, and a revised, Draft PA/EIS/EIR that addresses the inadequacies must be recirculated. It is important to note that recirculation is not required where the new information added to the Draft EIR merely clarifies or amplifies or makes insignificant modifications in an adequate Draft EIR. The changes made to the Draft PA/EIS/EIR as a result of the public comments in the Final PA/EIS/EIR represent clarifications to Draft PA/EIS/EIR. Therefore, according to CEQA, the Draft PA/EIS/EIR would not require recirculation.

26-21 The commenter has submitted Attachment A, which includes a letter from Renee Owens, consultant, regarding the Project. In the first comment of this exhibit, Ms. Owens makes a general statement that the Draft PA/EIS/EIR fails to meet the requirements of impact analysis and mitigation under CEQA and NEPA. The generalized statement is acknowledged. However, because the comment does not explain the basis for the comment or include data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comment as required by CEQA Guidelines Section 15204(c), the County has insufficient information to provide a more detailed response. Regardless, the Draft PA/EIS/EIR provides a detailed analysis of all of the potential direct, indirect, and cumulative physical environmental impacts that may occur and provides an appropriate level of detail for public review and informed decision-making.

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[2] Bruce Tsuchida, et al., *Comparative Generation Costs of Utility-Scale and Residential-Scale PV in Xcel Energy Colorado's Service Area* (July 2015), http://files.brattle.com/files/7626_comparative_generation_costs_of_utility-scale_and_residential-scale_pv_in_xcel_energy_colorado%27s_service_area.pdf.

[3] Amicus Curiae Memorandum of Governor Edmund G. Brown Jr. in Opp'n to Pl.' Mot. for Prelim. Inj., *W. Watersheds Project v. Salazar*, No. 2:11-cv-00492-DMG-E at 10 (C.D. Cal. Jul. 19, 2011) (citations omitted); see also http://www.drecp.org/meetings/2011-10-12_meeting/presentations/Governor_Brown_Renewable_Energy_Statement_10-12-2011.pdf (statement of Governor Jerry Brown, declaring that good policy requires "meeting our electrical supply needs from both large central station power sources, and from distributed generation. Utility-scale power plants can take advantage of economies of scale early in the growth of new technologies. And, as large purchases of solar panels for building utility-scale projects have caused manufacturers to increase their production capacity, . . . the growing supply (and competition) are bringing the price of components down to a level that make them more affordable in smaller applications.").

26-22 See response to Comment 26-5. The comment states that the applicability of DRECP is handled inconsistently within the Draft PA/EIS/EIR, resulting in a failure to meet decision criteria in the CDCA Plan, including minimizing the number of rights-of-way, avoiding sensitive resources, and considering wilderness values. The Draft PA/EIS/EIR and the DRECP clearly provide that the DRECP does not apply to the Project and the commenter's analysis of the CDCA Plan applies plan requirements in the wrong context (see also Master Responses 4 and 5a of Appendix AA of the Final PA/EIS/EIR).

26-23 See response to Comment 26-19. The comment states that alternatives involving rooftop solar and already degraded agricultural lands should have been evaluated, and cites the environmental and cost advantages of such an alternative.

As noted in the PA/EIS/EIR, Section 2.9.2.4, Table 2-8, additional alternatives were considered. Distributed solar technology was considered, but eliminated from detailed analysis in the PA/EIS/EIR. As described in Section 2.9.2.4, Table 2-8, it was determined that alternatives incorporating distributed generation with utility-scale generation, or looking exclusively at distributed generation, do not respond to the BLM's purpose and need for agency action, which is focused on the siting and management of utility-scale solar energy development on public lands.

Various agency publications identify the need to increase renewable generating capacity from distributed generation and utility-scale sources. While distributed generation could be an alternative for any individual project, with more than 10,500 MW of distributed generation throughout the state, it would not, by itself achieve the RPS goals. The County reviewed the previous documents and did not feel that an update to the distributed generation alternative was warranted. This is also consistent with the BLM's policy decisions to authorize utility-scale renewable energy (see Section 1.3, Purpose and Need for the BLM's management objectives regarding renewable energy).

The comment also cites a USFWS recommendation to consider an alternative that would minimize impacts to migratory birds, and objects that this was eliminated because "the Applicant denied this request" because some features are not technically or economically feasible. The comment notes that other alternatives that reduced the scope of the Project were considered, so the argument is specious. A point-by-point analysis of the proposed migratory bird alternative was presented in Table 2-7 of the Draft PA/EIS/EIR. Of the 22 items evaluated, only one, irregular spacing of panels, was cited as being infeasible. That text does not state that this conclusion is based on a denial of the request by the Applicant. It is, instead, a conclusion of the BLM and the County. While it is true that the PA/EIS/EIR considers an alternative that comprises a reduction in scope, that fact does not imply that all alternatives that reduce the scope are therefore technically and economically feasible, and require detailed analysis.

Furthermore, it is important to recognize that USFWS proposed the migratory bird impact minimization alternative in its April 8, 2015 scoping comment letter based on allegations that "There is growing evidence of what is referred to as a 'lake effect' or 'polarized light pollution' (Horvath et al. 2009), which presents a particular hazard to water-associated birds and other species seeking migratory stopover habitat typically found along rivers and lakeshores." However, this alleged body of evidence never materialized. Incidental and systematic monitoring of multiple utility scale solar facilities in California alone prior to 2015 and in the four years since has not demonstrated impacts of a magnitude that might affect migratory birds at a population or species level (i.e., on a level that might have environmental impacts). In other words, there is no significant impact that would justify considering this alternative, a fundamental point that the commenter does not address and thus must be understood to concede. On top of this, there is no evidence that the measures proposed by USFWS would have any impact on avian mortality impacts, significant or otherwise. The alternative was not based on substantial evidence, was not warranted based on the assessment of environmental impacts, would unnecessarily increase costs, and in any event was largely incorporated into other existing alternatives, as demonstrated by the discussion in Table 2-7. As a result, the agencies determined that a specific Migratory Bird and Special Status Species Protection Alternative need not be developed.

26-24 See response to Comment 26-16. The comment lists several management plans cited in the PA/EIS/EIR, and states that these should be available for public review along with the Draft PA/EIS/EIR. The comment specifically cites the BBCS, Tortoise Mitigation Plan, Raven Management Plan, Desert Kit Fox and Badger Management Plan, and others.

In general, specific project design details and/or management procedures are dictated by law and/or agency policy and guidelines. In each case, the Applicant (or subsequent grant holder) would be required to comply with the applicable law, policy, and/or guidelines. In all cases, plans would be required to be submitted to and approved by BLM and any other agency with regulatory oversight, as detailed in the applicable mitigation measure, before construction (or decommissioning, as appropriate) could begin. Details of the design and operation of the facility are not likely to substantially alter the impacts that have been concluded, and there are measures that would apply from mitigation in the PA/EIS/EIR and from regulation that would control these aspects to further ensure they are not more impactful than what is assumed in the PA/EIS/EIR.

26-25 See response to Comment 26-17. The comment states that the BBCS was not completed at the time of the Draft PA/EIS/EIR, and therefore the mitigation measures were not sufficiently detailed for allow appropriate review.

Please see responses to comments 26-14, 26-15, and 26-16. Those responses demonstrate that the general requirements of the BBCS were already defined in the Draft PA/EIS/EIR in mitigation measure WIL-6. In addition, the BBCS is not, on its own, the only mitigation measure that addresses impacts to migratory birds. Several other mitigation measures, including VEG-6 (WEAP), VEG-8.10 (avoidance), WIL-6 (BBCS), WIL-7 (pre-construction surveys), and WIL-9 (burrowing owl measures) address those impacts.

26-26 See response to Comment 26-15. The comment stipulates multiple instances in which mitigation for nesting birds is not adequate. These include statements that some measures (such as VEG-8) rely on observation of behavior, and other measures (such as WIL-7) do not define the persons responsible for surveys. The comment states that reliance on trained workers to identify cannot be considered effective, especially when the training program has not been presented, and that the size of buffer zones should be determined by USFWS or CDFW.

There are a variety of mitigation measures that require pre-construction surveys, avoidance, compensation, and monitoring of impacts to birds. These include VEG-6 (WEAP), VEG-8.10 (avoidance), WIL-6 (BBCS), WIL-7 (pre-construction surveys), and WIL-9 (burrowing owl measures). These cannot be considered to be stand-alone measures. For instance, the fact that the workers trained through the WEAP to identify potential bird impacts are not trained biologists is not a reason not to train them to be observant. This measure is in addition to, not in place of, monitoring by the Designated Biologist and biological monitors. Taken together, these measures are comprehensive in identifying and mitigating impacts to birds.

With respect to establishment of buffer zones, the only special status bird species expected to nest in the Project area is the burrowing owl, and the buffer requirement for the burrowing owl is defined in mitigation measure WIL-9. The mitigation measures for the Project require the buffers recommended by CDFW in its guidance for burrowing owls and the nesting bird plan will include additional agency-approved buffers. In addition, as noted in response to Comment 26-15, the nesting bird plan will include additional agency-approved buffers.

The comment cites personal observations, including photographs, of a variety of nesting birds impacted by solar facilities, as examples of how avian impacts have been underestimated and minimized, resulting in inadequate mitigation. The photographs are acknowledged, but represent anecdotal information, and not systematic analysis of the potential for solar facilities to cause significant impacts to birds. The locations of most of the photographs are not provided. The Draft PA/EIS/EIR acknowledged that bird fatalities could occur, so photographs of dead or injured birds in unknown locations does not provide additional information.

Comments questioning the inadequacy of the avian monitoring and how the data to be collected will be useful in avoiding impacts overlook the fact that the Draft PA/EIS/EIR concludes that the Project will not have significant impacts to birds and bats that require mitigation. Combined with the bat habitat assessments and surveys, the data to date on avian impacts, gathered on multiple projects throughout the state and in particular at several neighboring projects, does not support a conclusion that solar projects in general, or this Project in particular, will have a significant impact on birds and bats. The data collected through the BBCS will be used to confirm what existing data predicts and for good measure includes other requirements that could be implemented if the Project data deviates from the norm.

The commenters further criticize the nesting bird avoidance and mitigation measures for giving too much discretion to the qualified biologists conducting the surveys. The commenters take issue with the criteria that will be used to assess the impact of Project activities on nesting birds and the discretion given to the qualified biologist to determine nest avoidance buffer zones as needed and appropriate. The commenters would require the developer to seek approval from USFWS or CDFW when establishing buffers for each nest encountered. Commenters' proposal is not feasible, as the agencies do not have the resources to respond to every situation during development. Nor is it necessary, as the agencies must approve the qualified biologist and can address any issues with the integrity of those biologists through the approval process. To the extent that the developer encounters nesting birds protected by the Federal Endangered Species Act, however, it will be incentivized to seek guidance from USFWS to avoid take through harassment. No additional measures are needed.

26-27 The comment states that using desert tortoise habitat mitigation costs as a proxy for compensation for other species is flawed, that the selection criteria for compensation lands are not defined, that details of the compensation are deferred, that vagueness of the mitigation measures leads to improper variances and allowing developers to control the oversight process.

In referring to use of the costs for desert tortoise mitigation lands as a proxy for other compensation requirements, the comment also quotes a phrase from the mitigation measures that this is the "best available proxy", meaning that the agencies have considered other options and determined that this is the most appropriate approach. The comment also fails to point out that mitigation measure 9.c goes on to acknowledge that the actual costs may vary depending on the actual costs of acquisition and the necessary habitat improvements. Given the fact that compensation lands cannot be acquired until the final Project acreage is known, mitigation measure 9.C provides substantial detail regarding how those lands are to be identified, acquired, and approved by BLM. In general, the desert tortoise is not used as a proxy for any other species requiring compensation. Of the species present in the Project area, the only ones which require compensation are the desert tortoise, Mojave fringe-toed lizard, burrowing owl, Harwood's eriastrum and, if found to be present, Couch's spadefoot toad. State jurisdictional waters, if present, would also require mitigation. There is no requirement that lands acquired to compensate for impacts to one species be completely separate and in addition to lands acquired to compensate for impacts to another species. CEQA does not require that "mitigation . . . account for every square foot of impacted habitat to be adequate. What matters is that the unmitigated impact is no longer significant." (*Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1233 (*Banning Ranch Conservancy*).) Compensation requirements for these various species accordingly may be accomplished through nested compensation, if the land to be acquired is appropriate as compensation for each species for which it is acquired.

With respect to the selection criteria for the compensation lands, the comment objects that the criteria are only descriptive of the required characteristics, and are not quantitative. However, as the commenter points out in the comment, multiple complex factors apply to the favorability of compensation lands, including the range of species being addressed, as well as the condition of the land. Any attempt to quantify these factors to develop a simple formula for comparing potential compensation lands would almost certainly be open to criticism for failing to include all factors, or for scoring one factor higher than another. The description of the criteria in measure 9.c is detailed, and requires that all features of the compensation, including the land involved, the species to which the compensation would apply, the management plan for the land, and the required habitat improvement, be submitted to the BLM AO for review and approval. Instead of compensation being left up to the Applicant and "a few personnel", the process for developing and approving compensation lands is rigorous, including consideration of lands that the agency has already identified as appropriate, initial consideration of additional lands that have been identified by the Applicant, and consultation with CDFW, USFWS, and other agencies responsible for the resources.

With respect to the comment regarding unclear mitigation measures and developer control of the oversight process, BLM has continually revised mitigation measures and made them more specific as experience has been gained in the renewable energy development program. BLM has also revised contracting procedures to improve their ability to provide more direct oversight of the monitors through the ECCMP.

Ms. Owens' confession that she has cut corners on numerous projects under pressure from the developer is not substantial evidence that First Solar, BLM and/or Riverside County will, or has, cut corners on this Project. The comments, to be useful in the CEQA context, need to identify mitigation measures that will not make significant impacts less than significant. General arguments that the Project documents lack sufficient detail do not identify shortcomings under the law.

26-28 See response to Comment 26-13. The comment states that the Draft PA/EIS/EIR provides an inconsistent description of light sources in the area, and therefore fails to adequately assess impacts to bats.

The comment claims that the description of lighting is inconsistent by referencing a statement that the Project would include light sources, and then a separate statement that the primary sources of light in the area is vehicles on I-10 and residences at Nicholls Warm Springs/Mesa Verde. One, the statement that the Project would include light sources, is a statement regarding future conditions, after construction is initiated. The other, the statement that the primary source of light is vehicles and residences, is a statement regarding current, existing conditions. Because they address different timeframes, these two statements are not inconsistent with each other.

With respect to the portions of the comment discussing compensatory mitigation, note that there is no regulatory requirement for compensation for loss of bat foraging habitat for the referenced species.

26-29 See responses to Comments 26-14, 26-15, and 26-26. The comment quotes one item, from a list of 9 items, within mitigation measure WIL-6 to criticize the inclusion of monitoring as a component of mitigation for impacts to bird species. In doing this, the comment fails to acknowledge the other 8 components of WIL-6, as well as components of measures VEG-6, VEG-7, VEG-8, VEG-10, WIL-7, and WIL-9, that are more specifically focused on avoidance, mitigation, and compensation for impacts.

The comment also suggests that the use of words such as “forecasting” and “speculative” within the analysis of bird impacts is an attempt to obfuscate impacts. In fact, these words are a direct quote from the Conclusions section of Horvath (2009), which is one of the most commonly quoted publications addressing the impacts of polarized light pollution on birds. The PA/EIS/EIR acknowledges that avian mortality has been identified at commercial scale solar facilities. However, it weighs the entire body of evidence to determine whether those impacts are specifically attributable to solar facilities (as opposed to collisions with any other man-made structure), and whether those impacts would be significant. Therefore, using this one quote from Horvath (2009) out of context to suggest that the PA/EIS/EIR was attempting to obfuscate impacts is not accurate.

The comment refers to supporting statements by USFWS, CDFW, and evidence provided by other research biologists which show that solar facilities pose significant impacts to birds. The USFWS Biological Opinion (BO), issued on April 12, 2019, addressed impacts to special status bird species, including the Yuma clapper rail, southwestern willow flycatcher, least Bell's vireo, and yellow-billed cuckoo. With respect to these species, the BO concluded that the Project would not cause adverse impacts to breeding activities because suitable habitat is not present in the Project area. Although adverse effects could result from collisions with solar panels, power lines, and fences, an analysis of results from other utility-scale solar projects in the Mojave Desert indicated that collision effects at a single project would be unlikely to occur or would be considered a discountable effect. To address the additive risk of multiple hazards on a CDCA Plan level, USFWS and BLM have worked together to develop project-to-project consistency in mortality monitoring, continue to evaluate the risk on a case-by-case basis, and develop project-specific recommendations to avoid adverse effects. The BO concluded that the Project is not likely to adversely affect the four bird species.

The comment objects to the Worker Environmental Awareness Program (WEAP), stating that the PA/EIS/EIR "relies heavily" on the WEAP for mitigation. As discussed in response to Comment 26-26, there are a variety of mitigation measures that require pre-construction surveys, avoidance, compensation, and monitoring of impacts to birds. These include VEG-6 (WEAP), VEG-8.10 (avoidance), WIL-6 (BBCS), WIL-7 (pre-construction surveys), and WIL-9 (burrowing owl measures). These cannot be considered to be stand-alone measures. The fact that the workers trained through the WEAP to identify potential bird impacts are not trained biologists is not a reason not to train them to be observant. This measure is in addition to, not in place of, monitoring by the Designated Biologist and biological monitors. Taken together, these measures are comprehensive in identifying and mitigating impacts to birds.

The comment cites monitoring data received through a Freedom of Information Act request (Table 1). These tabulated data are acknowledged. The Draft PA/EIS/EIR presented monitoring data from Desert Sunlight and Genesis discussing the known mortality data (see Draft PA/EIS/EIR pages 4.4-12 through 4.4-15, including Table 4.4-4). Upon review of the Draft PA/EIS/EIR, several commenters noted that Table 4.4-4 presented raw data that had not been collected systematically or corrected for observation bias. Although the specific source documents for Table 1 in the comment were not provided, it is assumed that the source of the Desert Sunlight data used for Table 4.4-4 of the PA/EIS/EIR and Table 1 of the comment were the same, since they cover the same time period meaning that the Desert Sunlight data presented in Table 1 is raw, uncorrected data. Similarly, the data from McCoy presented in Table 1 of the comment predates 2016, and therefore also predates the implementation of systematic monitoring at McCoy. The other data cited in table is from solar facilities in Imperial, San Luis Obispo, and San Bernardino Counties, and represents a different environment from that of the DQSP. The Draft PA/EIS/EIR includes a detailed analysis of the existing data for relevant, comparable projects in the region. Citing papers that generally discuss polarized light pollution do not advance the conversation on this topic because the data, as discussed in the Draft PA/EIS/EIR has not supported this hypothesis as it relates to solar projects. Similarly, citing studies of solar thermal projects, like McCrary et. al is not productive because the technology, and its impacts on birds, is very different from the proposed Project. As part of the development of the Final PA/EIS/EIR, the agencies acquired more recent bird fatality monitoring data from local solar facilities, and incorporated it into the analysis of impacts to migratory birds in Section 4.4.3.1. This included systematic post-construction monitoring data for Desert Sunlight, McCoy, and Blythe. Although none of the associated monitoring reports drew specific conclusions regarding the lake effect or other solar facility impacts to migratory birds, they did correct the raw observation data from these surveys for searcher efficiency and carcass persistence to allow a better understanding of actual mortality numbers, as well as to allow a comparison among these three facilities.

26-30 As stated in Draft PA/EIS/EIR Section 3.4.1.1, discussions are presented for special-status species which were detected, there was evidence of occurrence, or they are likely to occur. Also, the text states that discussions of some special-status species detected during general inventories (such as migratory birds) are grouped. As shown in Table 4 of the Biological Resources Technical Report (Appendix M), the potential for the presence of both the willow flycatcher and southwestern willow flycatcher is low. In particular, no Southwestern willow flycatchers, the federally listed subspecies, have been observed on any solar projects. Use of other species of willow flycatchers as a proxy for the Southwestern willow flycatchers is scientifically flawed because other subspecies have different migration patterns and seasons and migrate in different numbers. This species is included within the general discussion of impacts to migratory birds in Section 4.4.3.1, and BLM consulted with USFWS on the potential for impacts to the Southwestern willow flycatcher, and thus sufficiently considered potential impacts.

See also response to Comment 15-41 in Appendix AA of the Final PA/EIS/EIR.

26-31 The comment uses detection information from Table 13 of the Corvus report. The Corvus report does not distinguish between observations within the Project transects versus observations along the control transects. Observations along the control transects do not, on their own, indicate presence in the Project area. Of the bird species mentioned in the comment, the prairie falcon is a special status species, and was stated to have a moderate potential for using the site for foraging. The other species are not special status species, and/or were judged to not have more than a low potential for presence. The information regarding the presence of prairie falcon was discussed on Page 3.4-18, and in Table 4.4-2 of the Draft PA/EIS/EIR; therefore, for clarification, the prairie falcon has been added to the species list in Table 3.4-1 of the Final PA/EIS/EIR. The addition of the prairie falcon to the list of species is not a substantial change in the proposed action or significant new information that would require a supplemental EIS under 40 CFR § 1502.9(c). Also, the additional description information does not change any significance determination, and does not present new information that would warrant recirculation of the Draft EIR pursuant to Section 15088.5 of the State CEQA Guidelines.

26-32 The comment states that impacts to desert bighorn sheep and burro deer are underestimated, unmitigated, and significant. This comment comes to this conclusion based on assumed impacts to wildlife movement, and on the presence of microphyll woodland habitat onsite.

Figure 3.4-10 of the Draft PA/EIS/EIR showed that the bulk of the Project does not overlie any of the WHMAs. Only the gen-tie line leading into CRSS, and following the path of numerous other gen-tie lines, will be developed in the far corner of a WHMA for wildlife movement.

Although the comment objects to the statement that the WHMAs were considered unoccupied range in 2002, it presents no data suggesting that this situation has changed. In response to public comments on the Draft PA/EIS/EIR, a new figure (3.4-11) has been added showing the relationship of the Project to the California Desert Linkage Design Network and other linkages and conservation areas. The text in Sections 3.4.2, 4.4.4, and 4.4.6 of the Final PA/EIS/EIR has been revised to address the impact of the overlap between the network and the Project. The overlap primarily involves the gen-tie line, although a portion of the solar arrays also overlies the edge of the network. The additional description information is not a substantial change in the proposed action or significant new information that would require a supplemental EIS under 40 CFR § 1502.9(c). Also, the additional description information does not change any significance determination, and does not present new information that would warrant recirculation of the Draft EIR pursuant to 14 CCR Section 15088.5.

The statement in the comment that the species' microphyll woodland habitat is onsite is not accurate. As shown in Figure 3.3-2 and Table 4.3-1, the Project footprint has been adjusted so that it does not overlap the *Parkinsonia florida – Olneya tesota* alliance (microphyll woodland).

26-33 The comment states that impacts to burrowing owls are underestimated and unmitigated.

The comment states that the area has an "incredibly high" number of burrows. However, the comment provides no data to demonstrate that the number of potential burrows (70), all except four of which are unoccupied, within an area of more than 5,000 acres, can be considered "incredibly high". Furthermore, as explained in Section 4.4.3.1 of the Draft PA/EIS/EIR, page 4.4-9, of only four occupied burrows identified in the Study Area, only one occupied burrow is within the Project footprint. Figure 3.4-4 shows that two of those four burrows are situated in the northern extension of the original application area north of Seeley Avenue, and which is not included within any of the alternative footprints. The other two are situated in the far northeastern corner of the Project area, and only one of these would be within any alternative footprint. Also, within the footprints of the alternatives, there are only seven Class 2 burrows, indicating fresh sign. Based on these surveys results, the implication that the Project area would cause significant impacts based on an "incredibly high" number of burrows is not accurate.

The comment raises several objections to the BUOW Protection and Mitigation Plan required by measure WIL-9, citing its reliance on re-location, rather than avoidance, which is favored by CDFW. As shown in Figure 3.4-4, avoidance of all burrows is not possible, but the alternative footprints do avoid all but one of the Class1 burrows, and all but seven of the Class 2 burrows. The comment objects to language in measure WIL-9 allowing the buffer distance to be re-assessed by the Qualified Biologist based on site conditions, calling this "subjective". Because measure VEG-2 requires the Designated Biologist to report all special-status species observations to the BLM, any observation of a burrowing owl would be reported, and any decision regarding modification of the buffer zone would be made in consultation with BLM.

The burrowing owl mitigation generally follows the guidance of CDFW. Agencies are permitted, however, to deviate from CDFW's guidance in the context of a particular project. Here, the County has used its discretion to modify some of the recommended guidelines due to the limited number of burrows showing possible recent habitation and additional agency oversight for a project on public lands managed by BLM. This approach is consistent with CEQA.

26-34 The comment states that the analysis of impacts to the Mojave fringe-toed lizard is inadequate, resulting in incomplete mitigation.

The comment notes the number of individuals and acreage of occupied habitat that would be impacted by the Proposed Action, but fails to note that Alternatives 2 and 3 were largely designed to avoid impacts to sand deposits that support habitat for the species. As shown in Table 4.4-3 of the Final PA/EIS/EIR, there would be no impacts to individuals or occupied habitat for the solar array area. There would be impacts associated with the gen-tie line, but these are largely due to the fact that the CDCA Plan requires consolidation of transmission lines in approved corridors, and the approved corridor in this area is coincident with sand deposits. Several other lines already exist within or have been approved for development in this same area.

The statement that impacts to the Mojave fringe-toed lizard may not be fully mitigated was disclosed on page 4.4-7 of the Draft PA/EIS/EIR. The comment states that, based on this, the Applicant must consider alternatives that would avoid impacts to MFTL populations and regional sand movement zones. Multiple sections within the Draft PA/EIS/EIR consider and evaluate alternatives that maximize avoidance, and minimize impacts to, both MFTL habitat and sand deposits. The statement that the Draft PA/EIS/EIR does not quantify impacts to the Sand Zones identified in Kenney (2017) is incorrect. The Draft PA/EIS/EIR provided a substantial discussion of the potential impact of the Project on sand deposits (Pages 3.3-4 through 3.3-8, 3.3-16, 4.3-9 through 4.3-12, 4.4-7 through 4.4-8, and 4.4-17). As discussed in those sections, almost all of the sand deposits discussed by Kenney are either uphill or upwind, or both, of the Project area, and are not in a position to be impacted. In addition, those sections not only discuss how the Project avoids impacts to sand zones, but presents substantial evidence that the "regional sand zones" discussed in the literature are actually locally sourced, and not regional in nature.

The comment objects to the 3:1 compensation proposed for impacts to MFTL habitat. As stated in mitigation measure WIL-10, the 3:1 compensation ratio is required by the NECO Plan and is consistent with mitigation requirements for other projects in the area. While no specific MFTL protection plan is identified in the mitigation measures, MFTL protection and various wildlife impact avoidance requirements identified in other mitigation measures will serve the same purpose.

The comment claims that the results of the MFTL surveys are inaccurate, because the species is hard to detect. The MFTL surveys were conducted under the direction of BLM biologists, using the accepted survey protocols. Although the Draft PA/EIS/EIR reports estimated numbers of individuals and acreage of occupied habitat to allow comparisons of impacts among alternatives and estimated compensation requirements, this is just one tool used to avoid and evaluate impacts to the species. As discussed in Section 4.4.3.1, the PA/EIS/EIR used a combination of direct MFTL survey observations, site-specific sand deposit mapping by multiple researchers, vegetation surveys using DRECP-required protocols, and mapping of state jurisdictional waters that may act as a moisture source for sand deposits as various ways to identify potential MFTL habitat, and to design alternative footprints to avoid this habitat.

The comment discusses the potential for individuals being trapped by fencing, road strikes, alteration of the microclimate (the heat island effect), and the attraction of flat-tailed horned lizards (FTHL) to water on roadways in their argument that DQSP survey results are underestimated. In general, these issues are ways in which MFTL may potentially be impacted, but are not relevant to the question of whether the surveys underestimate the numbers of individuals or extent of habitat. The issues of fencing and road strikes were discussed in Section 4.3.1 of the Draft PA/EIS/EIR. The issue of the heat island effect was raised in public comments on the Draft PA/EIS/EIR, and a discussion was added to Section 4.3.3.1 of the Final PA/EIS/EIR. Although the comment discusses the potential for attraction of MFTL to water on roadways, the discussion is based observed behavior of the FTHL in a different environmental setting and is, in any case, a subset of the impacts by vehicle strike that were already discussed in the Draft PA/EIS/EIR.

Overall, the comment raises issues that are relevant to other species and locations (FTHL), have already been discussed and refuted in the Draft PA/EIS/EIR (regional sand deposits), and are speculative (heat island effect). In doing so, the comment fails to incorporate the results of a detailed analysis of existing studies of the sand deposits that comprise MFTL habitat, acknowledge the enormous extent to which the Project footprint was adjusted to provide alternatives that avoid both MFTL habitat and sand deposits, or to consider the cumulative action of multiple overlapping mitigation measures that, taken together would contribute to avoiding, mitigating for, and/or compensating for impacts to the species.

26-35 See response to Comments 11-56 (in Appendix AA of the Final PA/EIS/EIR), 26-9, and 26-10. The comment cites PA/EIS/EIR text regarding the density of black-tailed jack rabbits, and how the density estimate was used to state that golden eagles were expected to forage infrequently on the site. The comment states that the level of use by golden eagles cannot be predicted from the jack rabbit density data.

The conclusion regarding the relationship between the black-tailed jack rabbit density and the quality of the foraging habitat was based on the professional judgment and experience of the authors of the Biological Resources Technical Report (Appendix M). A subsequent search of the literature for data on the density of black-tailed jack rabbits identified a range of 0.04 to 5.2 rabbits per acre (Best 1996) in other locations, supporting the statement that the 0.0035 rabbits per acre on the Project site is relatively low. This information has been added to the PA/EIS/EIR text in Section 3.4.1. The additional data do not change any significance determination, and do not present new information that would warrant recirculation of the Draft PA/EIS/EIR pursuant to 14 CCR Section 15088.5.

The comment also refers to the proximity of foraging habitat to the Project site, and historic data on the presence of raptors to suggest that the Project site would be used for foraging by raptors, resulting in indirect impacts to foraging eagles.

The Draft PA/EIS/EIR (Section 4.4.3.1) acknowledges that the site provides foraging habitat, and presents the results of surveys and locations of nests, in addition to the jack rabbit data, to support a conclusion that foraging would be infrequent. The comment does not specifically identify the foraging habitat that is in proximity to the Project site, nor the historic data on the presence of raptors. Therefore, no changes are made to the PA/EIS/EIR text.

26-36 The commenter states the Project does not meet the obligations of CEQA or NEPA, and that the Project would result in significant and unmitigated impacts to biological resources. It states that a revised, Draft PA/EIS/EIR that addresses the inadequacies must be recirculated. It is important to note that recirculation is not required where the new information added to the Draft EIR merely clarifies or amplifies or makes insignificant modifications in an adequate Draft EIR. The changes made to the Draft PA/EIS/EIR as a result of the public comments in the Final PA/EIS/EIR represent clarifications to Draft EIR. Therefore, according to CEQA, the Draft PA/EIS/EIR would not require recirculation.

36-37 The comment provides the professional background of the commenter. The qualifications are acknowledged, and do not require further response.

36-38 The comment provides the curriculum vitae of the commenter. The qualifications are acknowledged, and do not require further response.

Appendix E: ERRATA

Desert Quartzite Solar Project: Errata to the Final EIS/EIR

On September 24, 2019, the BLM received concurrence from the State Historic Preservation Office on B LM's no adverse direct or indirect findings of effect for Alternative 2: Resource Avoidance (BLM Selected Alternative). The BLM is making clarifications to incorporate the requirements with a no effect findings and minor clarification to the measures.

The BLM Changes have been made to the Final EIS/EIR as shown below (with underline for added text and strikeout for deleted text).

Appendix G: Mitigation Measures

CULTURAL-1: Monitoring and Discovery Plan. ~~NHPA §106 Memorandum of Agreement.~~ ~~The BLM's execution of an MOA for the Proposed Action in accordance with the requirements of §106 of the NHPA will lead to avoidance, minimization, or mitigation of potential adverse effects to historic properties. If the Proposed Action is approved, the BLM shall prepare the MOA in consultation with the ACHP, SHPO, the Applicant, Riverside County, Native American Tribes, and other identified consulting parties. The MOA will be binding on the Applicant and the proposed undertaking. An executed MOA represents the BLM's completion of the NHPA §106 process. The MOA must be executed prior to the ROD.~~

~~The MOA will contain measures to avoid, minimize, and mitigate adverse effects to historic properties and detail the process for activities to proceed in areas where historic properties are not now known to exist; procedures for treatment of unanticipated effects and post-review discoveries; recognition that BLM will comply with NAGPRA; compliance monitoring; dispute resolution; and tribal participation. Resolution of adverse effects to historic properties will be developed in consultation and may include research and documentation, data recovery excavations, curation, public interpretation, or use or creation of historic contexts.~~

~~In addition,~~ A~~a~~ Plan for Archaeological Monitoring, Post-Review Discoveries, and Unanticipated Effects (also referred to a Monitoring and Discovery Plan or MDP) shall be prepared ~~, appended to the MOA,~~ and implemented and shall contain procedures to avoid, minimize, and mitigate effects to historic properties, and could include measures similar to the following:

1. Avoidance of cultural resources is the preferred mitigation measure. On the basis of preliminary NRHP eligibility assessments or~~,~~ existing NRHP eligibility determinations~~, or CRHR eligibility assessments~~, the BLM may require the relocation of Project components to avoid or reduce damage to cultural resource values. Where operationally feasible, potentially NRHP~~- or CRHR-~~eligible resources shall be protected from direct Project impacts by Project redesign within previously surveyed and analyzed areas.
2. Where NRHP~~- or CRHR~~-eligible or -listed historic properties cannot be protected from direct effects by Project redesign, the Applicant shall comply with appropriate~~ mitigative~~ treatment(s) that will be detailed in the MDP~~HPTP~~. An example of treatment is data recovery at affected sites.

3. All NRHP-listed or eligible cultural resources~~ and all CRHR-listed, eligible~~, and unevaluated cultural resources being treated as eligible (as determined by the BLM) that will not be affected by direct impacts, but are within 50 feet of Project construction activities, shall be monitored during ground disturbing activities by a qualified archaeologist. Protective fencing or other markers, at the BLM's discretion, shall be erected and maintained to protect these resources from inadvertent trespass for the duration of construction in the vicinity.

***Rationale:** On September 24, 2019, the BLM received concurrence from the State Historic Preservation Office on BLM's finding of no adverse effect for Alternative 2: Resource Avoidance (BLM Selected Alternative). As a result, the BLM no longer needs to develop a Memorandum of Agreement (MOA) or Historic Properties Treatment Plan (HPTP) to resolve adverse effects. The Monitoring and Discovery Plan is still required to address monitoring, post-review discoveries, and unanticipated effects during construction. Requirements under CEQA in the EIR may also be addressed in this document.*

CULTURAL-2: Long-Term Management Plan (LTMP). The Applicant shall prepare a Long-Term Management Plan (LTMP) for protection and management of NRHP-eligible cultural resources within the Project area/ROW boundaries during Project operations and decommissioning.

~~**Historic Properties Treatment Plan (HPTP).** Where NRHP- or CRHR-eligible or -listed historic properties cannot be protected from indirect effects by Project redesign, the Applicant shall comply with appropriate mitigative treatment(s) that will be detailed in a HPTP to be prepared for the Project prior to issuance of the NTP or a County Grading Permit. Indirect impacts include, but are not limited to visual effects, auditory effects, increased awareness of the sites, and increased traffic within the area. Treatment of the sites for indirect impacts may include complete recordation or updates of sites, field checks or long term monitoring, and rerouting of access roads near sites.~~

***Rationale:** Since the BLM Selected Alternative will have no adverse effects, a HPTP, as indicated above, would not be prepared. A LTMP would be prepared to identify how the project will protect and manage NRHP-eligible cultural resources within the project area/ROW boundary during the project's operations and decommissioning.*

CULTURAL-3: Identification of Human Remains. For human remains discovered on BLM land, the process for securing the site, notification of responsible parties, and subsequent actions shall be identified in the MDP required by Mitigation Measure CULTURL-1 and CULTURAL-5. The actions to be identified include compliance with State Health and Safety Code Section 7050.5 and consultation with Native Americans if appropriate and actions to comply with NAGPRA (25 U.S.C.§ 3001) relative to the discovery and handling of NAGPRA defined ~~Native American cultural~~ items such as human remains, funerary objects, sacred objects, or objects of cultural patrimony.

Rationale: Clarification that the MDP includes state health safety code and NAGPRA requirements.

CULTURAL-4: Unanticipated Discoveries. If, during ground disturbance activities associated with construction, operation and maintenance, or decommissioning, archaeological sites are discovered that were not identified and evaluated in the archaeological survey reports or the Final~~Draft~~ PA/EIS/EIR conducted prior to Project approval, and the following procedures shall be followed and incorporated into the MDP, required in CULTURAL-1.

1. All ground disturbance activities within 100 feet of the discovered cultural resource shall be halted and the applicant shall notify the Project archaeologist, the Native American Tribal Participant as appropriate~~Monitor~~, the BLM Field Office Archaeologist, and (on non-Federal land) the County archaeologist to discuss the significance of the find.
2. At the meeting, the significance of the discoveries shall be discussed in consultation with the ~~Native American Tribal Monitor and the~~ Project archaeologist and as appropriate the Native American Tribal Participant. The BLM alone shall determine the appropriate treatment for historic properties discovered ~~cultural resources~~ on BLM-managed lands in accordance with 36 CFR 800.13. The ~~County Archaeologist and the~~ BLM ~~AO~~ ~~together~~ shall determine the appropriate mitigation (documentation, evaluation, recovery, avoidance, etc.) for historic properties~~cultural resources~~ on BLM-administered ~~private~~ lands. In determining the appropriate treatment on BLM-administered ~~private~~ land, the BLM shall follow requirements of 36 CFR Part 800.13 for post-review discoveries and unanticipated effects ~~and the County Archaeologist shall implement CEQA Guidelines Section 15126.4(b) regarding mitigation related to impacts on historical resources and state CEQA Guidelines Section 15064.5(c) and 21083.2(g) regarding archaeological resources~~.
3. Further ground disturbance shall not resume within the area of the discovery until a meeting is convened with the aforementioned parties and a decision is made with the concurrence of the BLM ~~and (on private land) the County Archaeologist~~ as to the appropriate preservation or mitigation measures. The Applicant shall comply with the determinations of the ~~County Archaeologist and~~ BLM.

Rationale: *The text change clarifies the participation and coordination between the BLM and the Tribal participants. The BLM is responsible for implementing 36 CFR Part 800 and not CEQA guidelines.*

CULTURAL-5: Geoarchaeological Testing for Monitoring and Discovery Plan. Prior to issuance of the NTP ~~or a County Grading Permit~~, the Applicant shall have the Secretary of the Interior Qualified~~/County-approved~~ Project Archaeologist prepare and submit for approval to the BLM ~~and the County of Riverside~~ a MDP, per CULTURAL-1. Prior to development of the MDP~~CP~~, the Applicant shall conduct geoarchaeological testing to determine the most appropriate means of monitoring to be used during each type of construction activity. The MDP shall include a map of all cultural resources within the APE, as described in the Final ~~is Draft~~ PA/EIS/EIR. The MDP shall also detail how resources, if any, are determined eligible or resources that are unevaluated but avoided by Project design, would be marked and protected as Environmentally Sensitive Areas during construction. The MDP shall also map additional areas that are considered to be of high sensitivity for discovery of buried significant archaeological~~cultural~~ resources, including burials, cremations, or sacred features. The MDP shall detail provisions for monitoring construction in these high-sensitivity areas, incorporating the results of the geoarchaeological testing. It shall also detail procedures for halting construction, making appropriate notifications to agencies, officials, and Native American tribes, and assessing NRHP ~~and CRHR~~ eligibility in the event that unknown archaeological resources are discovered during construction. ~~For all post-review discoveries, the MDP shall detail the methods, consultation procedures, and timelines for implementing Mitigation Measures CULTURAL-1 and CULTURAL-2.~~

Rationale: *Clarifies that geoarchaeoligical testing is required for the Monitoring and Discovery Plan required in Cultural-1.*

CULTURAL-6: Native American Tribal Participant~~Monitor~~. Prior to any ground disturbances within the Project area, the Applicant shall, for a period of at least 60 days, make a good faith effort to ~~enter into a contract with and~~ retain participants to observe ground disturbances ~~monitors~~ designated by Tribal representatives. These participants ~~monitors~~ shall be known as the Native American Tribal Participants ~~Monitor~~ for this Project. Documentation of efforts shall be submitted to the BLM ~~and County Archaeologists~~.

Rationale: *The BLM encourages applicants to retain Tribal representatives to observe ground disturbances, but does not dictate that Tribal representatives are retained nor the means in which the Tribal representatives are retained.*

CULTURAL-7: Cultural Resources Monitoring Report. Prior to the final inspection of the first building permit, the Applicant shall prompt the Project Archaeologist to submit one (1) wet-signed hard copy and one (1) CD of a Cultural Resources Monitoring Report that meets BLM ~~Manual~~ standards and requirements ~~and also complies with the current Riverside County Planning Department's requirements~~ for ~~Phase IV~~ Cultural Resource Monitoring Reports and other cultural resource reports. The report shall include documentation of the required cultural/historical sensitivity training for the construction staff held during the pre-grade meeting, which shall include the BLM ~~and County Archaeologist, unless no County representative is available~~. BLM ~~and County Archaeologists~~ shall review the report to determine adequate mitigation compliance. The accepted report shall be submitted to the BLM, ~~County,~~ Eastern Information Center, and as determined by the BLM, the Patton Memorial Museum, ~~and~~ interested tribes, and other parties.

Rationale: *The monitoring reports and other kinds of cultural resources reports that may be needed under the MDP will be provided to meet BLM standards. Since this is a BLM requirement, BLM determinates when and how the report is distributed to other parties including tribes and the Patton Memorial Museum.*

CULTURAL-8: Worker Environmental Awareness Program (WEAP). Prior to issuance of a Notice to Proceed by BLM and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The training shall be prepared by the Project Archaeologist, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The Project Archaeologist shall be available (by telephone or in person) to answer questions posed by employees. The Native American Tribal Participant ~~Monitor~~ shall be given the opportunity to participate in the training. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:

- A discussion of applicable laws and penalties under the law;
- Samples or visuals of artifacts that might be found in the project vicinity;
- A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
- A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
- Instruction that the Project Archaeologist, alternate Project Archaeologist, and supervisory archaeology field staff have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the Project Archaeologist;
- Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the Project Archaeologist or supervisory archaeology field staff, and that redirection of work would be determined by the construction supervisor and the Project Archaeologist;
- An informational brochure that identifies reporting procedures in the event of a discovery;
- An acknowledgement form signed by each worker indicating that they have received the training; and
- A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the BLM project manager.

Rationale: *Minor update to specify the role of the supervisory archaeology field staff and the proper terminology of the Native American Tribal Participant.*

Measure Number	Measure Title	Method of Verification	Timing of Measure	Required for Activities on Specific Project Areas	Responsible Agency
WIL-13	Development of Ponding Area	BLM to approve any proposed ponds.	Approvals to be received before any ponds are developed.	BLM land and 160-acre private parcel ~~only~~	BLM and Riverside County
Rationale: *Clarification that approvals will need to be reviewed and approved on both Public Lands and the 160 acres of Private lands*					
CULTURAL-1	Monitoring and Discovery Plan~~NHPA §106 Memorandum of Agreement~~	Plan to be reviewed and approved by BLM. ~~MOA to be developed by BLM in consultation with the ACHP, SHPO, the Applicant, Riverside County, and Native American Tribes.~~	Plan to be submitted to and approved by the BLM prior to start of ground disturbance. Plan to be implemented throughout construction~~MOA to be developed prior to the ROD. Implementation to be ongoing throughout construction, operations, and decommissioning~~.	~~BLM land and 160-acre private parcel~~BLM land and 160-acre private parcel	BLM~~, ACHP, SHPO, Riverside County, and Native American Tribes~~
Rationale: *On September 24, 2019, the BLM received concurrence from the State Historic Preservation Office on BLM's finding of no adverse effect for Alternative 2: Resource Avoidance (BLM Selected Alternative). As a result, the BLM no longer needs to develop a Memorandum of Agreement (MOA) or Historic Properties Treatment Plan (HPTP) to resolve adverse effects. The Monitoring and Discovery Plan is still required to address monitoring, post-review discoveries, and unanticipated effects during construction. Requirements under CEQA in the EIR may also be addressed in this document.*					
CULTURAL-2	Long-Term Management ~~Historic Properties Treatment~~ Plan (LTM~~HPT~~P)	Plan to be reviewed and approved by BLM~~ and the County~~.	Plan to be submitted to and approved by BLM prior to start of ground disturbance and issuance of County grading permit. –Plan ~~implementation~~ to be implemented~~ongoing~~ throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel ~~and 160-acre private parcel~~	BLM ~~and Riverside County~~

Rationale: *Since the BLM Selected Alternative will have no adverse effects, a HPTP, as indicated above, would not be prepared. A LTMP would be prepared to identify how the project will protect and manage NRHP-eligible cultural resources within the project area/ROW boundary during the project's operations and decommissioning.*					
CULTURAL-3	Identification of Human Remains	Incidents to be immediately reported to County Coroner and BLM. ~~.~~Procedures for addressing discovery and handling of NAGPRA items detailed in the MDP required under CULTURAL-1 and Long-Term Management Plan (LTMP) required in CULTURAL-3.	~~Reporting~~ T~~t~~o be implemented ~~ongoing~~ throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel ~~and 160-acre private parcel~~	BLM ~~and Riverside County~~
Rationale: *Clarification that the MDP will include both state health safety code and NAGPRA requirements for discovery of human remains on BLM-administered lands.*					
CULTURAL-4	Unanticipated Discoveries	Incidents to be immediately reported to ~~be reported to Native American Tribal Monitor,~~ BLM~~, and County Archaeologist~~.	To be implemented throughout construction, operations, and decommissioning.~~Implementation to be ongoing throughout construction, operations, and decommissioning.~~	BLM land ~~and 160-acre private parcel~~only and 160-acre private parcel	~~Native American Tribal Monitor,~~ Project Archaeologist and BLM~~, and County Archaeologist~~
Rationale: *The text change clarifies the participation and coordination between the BLM and the Tribal participants. The BLM is responsible for implementing 36 CFR Part 800 and not CEQA guidelines.*					

CULTURAL-5	Geoarchaeological Testing in support of Monitoring and Discovery Plan	Testing fieldwork to be ~~Plan to be~~ reviewed and approved by BLM for BLM administered lands ~~and the County~~.	Proposal to conduct testing fieldwork ~~lan~~ to be submitted to and approved by BLM in time to be incorporated into the MDP required under CULTURAL-1~~submitted prior to start of ground disturbance and issuance of County grading permit. Plan implementation to be ongoing throughout construction~~.	BLM land and 160-acre private parcel	BLM ~~and Riverside County~~
***Rationale:** Clarifies that geoarchaeoligical testing is required for the Monitoring and Discovery Plan required in Cultural-1.*					
CULTURAL-6	Native American Tribal Participant ~~Monitor~~	Documentation of efforts to retain ~~contract~~ the Native American Tribal Participants ~~Monitors~~ to be submitted to BLM ~~and County Archaeologists~~.	To be submitted to BLM at with MDP (required under CULTURAL-1) ~~Within 60 days~~ prior to ground disturbance.	BLM land and 160-acre private parcel	~~Native American Tribal Monitor,~~ BLM, ~~and County Archaeologist~~
***Rationale:** The BLM encourages applicants to retain Tribal representatives to observe ground disturbances, but does not dictate that Tribal representatives are retained nor the means in which the Tribal representatives are retained.*					
CULTURAL-7	Cultural Resources Monitoring Report	Monitoring and other cultural resource r~~R~~eports to be submitted to BLM- as necessary, as set forth in the BLM-approved MDP required under CULTURAL-1 and the BLM-approved LTMP required under CULTURL-2~~and County Archaeologists~~.	~~Prior to the final inspection of the first building permit~~To be implemented throughout construction, operations, and decommissioning.	BLM land and 160-acre private parcel	BLM ~~and Riverside County~~

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